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College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

SPRAY YOUR ORCHARD.

BY PROF. E. A. POPENOE.

CONSERVATISM is often a saving quality, but there is a point where it sometimes passes into old fogyism. This seems to be the case in the slow approval by the fruit-growers of our State of the methods, insisted upon for now several years by those experienced, of adding to the per cent of fair fruit from orchard and vineyard. Recent visits to some of the most progressive farming communities have shown but few growers familiar with the advantages of the possession and use of the spraying machine. They are all aware of the loss they suffer through the low-grade of fruit they offer to the visiting buyer, and have read about others' successful treatment of the orchard for apple worm and apple scab, but some how they have lacked the proper confidence or push to undertake the novel practice on their own account. To such it must be repeated that the practice is no longer an experiment. It has passed that stage. There is no longer any doubt that it is entirely possible, by the proper treatment, to so reduce the effects of apple pests that the usual proportions of fair to third-rate fruit are exactly reversed. Those who do not spray, continue in average years to gather the one-fourth of marketable and the three-fourths of unmarketable apples, while their neighbor, who puts in practice the advice of the experiment station, saves at least seventy-five per cent of his fruit as first grade, and finds his orchard one of his profitable investments.

Do not be deterred by the question of expense from the consideration of the proposition to buy and use a sprayer this spring. The expense compared with the result is practically nothing. Twelve dollars will buy an equipment complete, of the best pattern, suitable for the average orchard. This means a barrel for a tank, a first-class double-action force pump of suitable capacity, the hose, and the nozzle. Beyond this all needed is an eye to the condition of the orchard, the will to improve it, and the application at the proper time of the proper material. Paris green, a quarter of a pound to the fifty-gallon barrel of water, applied to the apple tree just after blooming, and twice at intervals of a week thereafter will do the work for the apple worm.

If, as is more than likely, your orchard is infested with apple scab, the disease which not only injures fruit, but also strikes at the health and vigor of the tree through its leaves, spray a fortnight before the blooms open with a solution of blue vitriol in water—two pounds to fifty gallons. After the flowers have fallen, spray with Bordeaux mixture, to which may be added two or two and one-half ounces of Paris green. Two more applications of the latter combination will ordinarily do for both apple worm and apple scab, though it may be advisable, where the scab is especially troublesome, to make a final application of Bordeaux mixture two weeks after the last spraying with the Paris green in combination.

To extend the profitable use of the spraying machine, it is desirable to treat the vineyard as a preventive measure against black rot, which without warning may destroy a promising crop just before the season of ripening. For this purpose the Bordeaux mixture is the material used. For the best results it should be applied once before the leaves expand, again when they have grown to the size of a half-dollar, and every two weeks thereafter until the grapes begin to change color. The unusual and somewhat startling hue of the whitewashed vines need not deter the owner from eating the grapes grown thereon. They are not poisoned, but on the contrary are likely to prove specimens of their kind much more perfect than grown on vines not so treated.

Nor need the work of the machine end here. The same spray, if applied in time, will go far toward keeping the potato field free from the deadly blight. It will help the raspberry bushes to outgrow the troublesome anthracnose, a kind of scab or rot of stem and leaf becoming wide-spread and abundant in our State. Indeed, the spraying-machine is already shown to be an implement of such value and importance to the fruit-grower that the surprise is that any should still be without it.

CONVERSATION.

BY ISABELLA R. FRISBIE, '94.

CONVERSATION, which forms the greater part of our intercourse with our fellow-men, is what may be called a lost art. Why, anybody can talk, you will say. To be sure they can; but to say something that will be interesting is quite another thing. How few are the good conversers, not only at the present time, but for centuries past; to enumerate them is not an impossible nor a difficult task.

To be a good conversationalist many things are required, which may be summed up by the expression, the right thing, in the right place, and above all at the right time. Such subjects as the weather, Mrs. So and So's private affairs,—of which everyone knows more than she, herself,— and all such small talk, that may be rightly classed as gossip, are to be avoided in good conversation.

A special requisite of the neglected art is tact, that quality which is so often missing in individuals. It is something that may be acquired, and will do more toward making a person agreeable than anything else. A knowledge of the events of the day, not only as concerned with politics, but those which include art, science, literature, and religion as well, is quite essential to carrying on a good conversation.

To be able to discuss the "Hawaiian question" with your political friend, review the latest book with the one of literary talents, and so on down the line, are accomplishments of which anyone may be proud. Our conversations must not be confined to the sober and sedate, as they would soon become tiresome; as it is,

> A little nonsense now and then
> Is relished by the wisest men.

It is the quick wit and brilliant repartee that gives spice to conversation.

To be a good converser it is also necessary to have the faculty of listening; for he who will monopolize an entire conversation is soon dubbed a bore. Another requisite, as before intimated, is to have something to say; for "Blessed is the man who, having nothing to say, refrains from calling attention to the fact."

In the field of literature, where we naturally turn to seek our best conversers, we are sadly disappointed to find that authors, as a rule, are not good conversationalists. This may be accounted for in a number of ways. Somtimes they wish to save their good things for the world at large. This is nice for the public, but not pleasant for their friends. Again, they are often egotistical, and are aroused to conversation only when the talk has turned upon their own works. Often it requires a process of deep and earnest thinking to bring out their best thoughts, and this is not possible during an ordinary conversation.

Charles Lamb and his friend Samuel Coleridge were notable exceptions to the above, which but goes to prove the maxim, "Exceptions to all rules," as many of the brighest conversations in England probably took place at the home of Lamb, "Over the Teacups," as it were.

Three Vital Questions.

The three vital questions that, beyond the present strife of parties and policies, now lie along the horizon like mountain ranges, to be scaled and overcome within the next political generation, are first, the reorganization and re-adjustment of labor to meet the demands of American society in the new era into which we find ourselves by the mighty agency of labor-saving machinery. Second, the obligation and limitations of the common Christian morality in government, as illustrated in our developing system of legislation for the protection of childhood and youth, the reformation of the criminal classes, the restraint of intemperance, sensuality, and all devices of beastliness, and the public oversight of great combinations that involve the right of existence to millions of people. Third, education, including therein that mental, moral, and industrial training of the younger third of our population for good citizenship which shall overcome the foul combination of ignorance, superstition, shiftlessness, vulgarity, and vice which, under the name of illiteracy, is the pestilent slough of every American community and the chronic peril of the republic. The young man or woman that studies, thinks, talks, votes, and lives in view of the speedy coming to the front of these mighty issues will be wise betimes. And the noblest political ambition of young Americans in view of public life should be, within the next twenty years, to have a right to demand a hearing from the minority that rules upon each and all these vital problems, on whose outcome the destiny of this republic and the western continent in the twentieth century will depend.—*Rev. A. D. Mayo.*

It costs something for the people of this country to eat and drink. Edward Atkinson figures out the national food bill at $6,000,000,000 a year. And this at 9 cents a meal all round for the 67,000,000 who are supposed to represent a consuming population of 60,000,000. He thinks that not less than a quarter of this huge sum is wasted in bad cooking.

Kindness to Animals.

"A righteous man regardeth the life of his beast." And sure enough, why not? Agricultural writers maintain and prove that the best results can not be obtained from poultry, cows, or horses where kindness is disregarded. "The charm of man is in his kindness," but not when he ruins a horse by a vicious jerk of the rein, takes the life of a colt in halter-breaking it, or the life of a calf in teaching it to take nourishment from a pail. The colored man is regarded the best of grooms because the horse is said to have a natural liking for him. The cause of this is not difficult to explain. He always has a kind word for his charge. Sir William Frazer relates that while one of the keepers in the Zoological Gardens was apparently kind, the animals had a natural aversion to him, and he was suspected of ill-treatment, but investigation revealed the cause. He seldom spoke to them and never kindly.

Every parent wishes his child to become a kind and law-abiding citizen. Since "as the twig is bent so inclines the tree," I would begin early and allow each child to own and treat only kindly a pet animal. This would delight them, and at the same time be a great factor in moulding their characters. Harry Benson says: "A school in Edinburg has graduated nearly seven thousand pupils who are carefully taught kindness to animals, birds, insects, etc., not one of whom has ever been charged with crime." He further states: "Investigations in our prisons has revealed the significant fact that less than three per cent of those questioned had a pet animal during their childhood." DeSailly, the eminent French educator, says: "Children who are taught kindness to animals become also more kind to each other." I have seen innumerable plans recommended to keep boys on the farm; but, in my opinion, if less stratagem and a little more reasoning from a man's standpoint—for I hold that what will keep a man on a farm will keep a boy—was employed, no difficulty would be encountered in this respect. Allow each boy to have in his own right some of the live stock, and in order that he may better know its value let him do the purchasing himself with money he has previously earned. Don't buy for him, but have enough oversight not to allow him to buy inferior animals or accept one as a gift. Nothing will more completely discourage a boy than to care for an animal all winter and have it die in the spring. Gift animals are generally aged, and expire just before grass starts. Make the boy feel that the animal is his, and the better it is cared for the more he will realize for it; but above all allow no animl to receive any but the kindest treatment, and you will not only have made him anxious to remain on the farm, but you will have him a kind and affectionate boy, and a God-fearing man as well.—*B. F. Simmons.*

Buying and Caring for Farm Machinery.

Farmers are now deciding upon the implements needed for next season's work. After examining what is on hand and its condition, it is possible to determine how much money must be expended for the purpose. While it is economy to have all the farm appliances absolutely necessary, it will pay this year to do careful planning in their selection. Machinery, even if given the best of care constantly deteriorates in value. Young stock animals are different; while not very profitable to keep just now, they are constantly growing into value, so if one has more than he really needs they are not a dead loss like unnecessary machinery. New improvements are also added each year, so that if an old cultivator or plow or planter can be made to do the work this season, an improved one can be had next. Another point is to always buy the best. They will last much longer, do better work, and on the whole be much more satisfactory. Take, for example, a cheap farm wagon. The wheels, if made of inferior material, will soon have loose tires, and be constantly demanding repairs; while one constructed of good material and well taken care of will need no tire-setting for six or even eight years. Farm implements kept under shelter when not in use last almost twice as long and do much better work. Hayracks, harrows, sleds, or any wooden frames with mortises in which water will soak, soon rot at these joints. Bright surfaces rust, wheels go to pieces, and general destruction results if this important item is not attended to. On many farms, in the West and Central West at least, from this neglect alone, machinery costs one-third to one-half more than it ought to; and even then it gives poor service.—*Orange Judd Farmer.*

Comfortable Modern Barns.

There is some difference between the modern barns, in which the manure never freezes and the cattle never shiver, and those ancient structures with cracks between the boards through which the wind could enter and in which one needed to chop the manure up with an ax before it could be shovelled out. This difference means that a less amount of food is needed to keep up the animal heat, that more milk can be produced for more months in the year, and that the farmer can milk and care for his stock without suffering from the cold. Again, he is more apt to be thorough about it than he would be if it was zero weather in the barn.

We know of modern barns in which water would not freeze in our coldest nights, yet are so well ventilated that there is no disagreeable odor in them to be imparted to the milk. Those who have such barns make money farming and enjoy the business at the same time. On the other hand, we know of some barns so different in construction and detail that those who work in them hate the milk business and the cows as well, declaring that there is on profit in the business. And finally, we should think the cows would hate the the one who owns them.—*American Cultivator.*

An All-Purpose Horse.

To the average farmer an all-purpose horse or team is an absolute necessity—economy and general utility considered. The theory that farmers must necessarily have large horses, weighing sixteen to eighteen hundred pounds, had a long and impartial trial, but after due deliberation it was pronounced impracticable. Most farmers do not need or require a horse of huge dimensions; and not many farmers can afford to keep specialty team and riding horses. The farmer usually desires a horse or team that will answer all purposes; that is, work to the sod-breaker, the stirring plow, the cultivator, the reaper, the mower, the hay rake, the farm wagon, the light or spring wagon, the buggy, and the road cart. Now there are many who, of necessity, require all these desirable qualities of their limited number of horses. This work may be satisfactory, or it may be performed in such a way as to give only partial satisfaction, owing to the kind of horses employed. If the number of horses be limited, as is usually the case, it is easily seen that the heavy draught horse will not answer the purpose to any reasonable degree of satisfaction. This style of horse is emphatically a specialty horse; and as such, not the kind the average farmer should own.

In his special sphere the heavy draught horse is both useful and profitable; but, outside this sphere, he cannot work to the satisfaction of his owner. Yet for the heavy draught horse there is a good market and a steady demand, and generally at figures that are remunerative. For the farmer, the most profitable horse is neither the largest nor the smallest, but one of that weight and symmetry which will enable him to perform all kinds of work; he should weigh from 1,150 to 1,250 pounds.—*Jeff W. Waynick.*

Future of the Peanut Crop.

The peanut production of the South is destined, according to Mr. Edward Atkinson, to have a large development—a development comparable with that of the cotton-seed oil industry. There is a great deal of money in it, by reason of the value of the oil, the oil-cake, and the fodder produced. The study of the peanut made at the Agricultural Experiment Station at the University of Tennessee, at Knoxville, gives the data required for an intelligent opinion. Two tons of peanut hay are grown to the acre, in addition to sixty bushels of nuts. The hay is fine for cattle. The oil closely resembles olive oil in not being a drying oil. It can therefore be used in woolen manufacture. The kernels of the nut produce nearly half their weight of oil, which is used in France to adulterate olive oil and make soup. It was used in the Confederate navy as a lamp oil. The meal from the oil cake is used as food for stock. Southern farmers have found it profitable to cut the hay and leave the nuts in the ground to fatten pigs, which root them out as wanted. It is found by careful experiment that the crop of nuts is greater on poor soil; the fodder, or hay, on rich soil. The plant excels all others in drawing nitrogen from the atmosphere through the intervention of bacteria. If only the oil is sold and the cake and fodder are fed to the stock on the farm, nothing is removed from the soil. The oil is a clear gain. It is noted also by Mr. Atkinson that the Southern sweet potato has money in it as a source of the world's supply of starch and glucose, since it is richer in these substances than are Western potatoes and corn.—*Baltimore Sun.*

Healthfulness of Fruits.

It is a mistaken idea that no fruit should be eaten at breakfast. It would be better if people would eat less bacon and grease at breakfast and more fruit. In the morning there is an acid state of the secretions, and nothing is so well calculated to correct this as cooling, sub-acid fruits, such as peaches, apples, and pears. Most of us have been taught that eating fruit before breakfast is highly injurious. How the idea originated I do not know, but it is contrary to both reason and facts.

The apple is one of the best of fruits. Baked or stewed apples will generally agree with the most delicate stomach, and are an excellent medicine in many kinds of sickness. Green or half-ripe apples stewed and sweetened are pleasant to the taste, cooling, nourishing, and laxative, far superior, in many cases, to the abominable doses of salts and oil usually given in fever and other diseases.

Oranges are very acceptable in most stomachs, having all the advantages of the acid alluded to, but the orange juice alone should be taken, rejecting the pulp. The same may be said of lemons, pomegranates, and all that class. Lemonade is the very drink in fevers, and when thickened with sugar is better than syrup of squills and other nauseous drugs in many cases of coughs.

Tomatoes act on the liver and bowels, and are much more pleasant and safe than blue mass or liver regulators. The juice alone should be used, rejecting the skin.

The small-seeded fruits, such as blackberries, figs, raspberries, currants, and strawberries, may be classed among the best foods and medicines. The sugar in them is nutritious, the acid is cooling and purifying, and the seeds are laxative.—*Food and Medicine.*

FARM NOTES FROM VARIOUS SOURCES.

Don't sell dirty eggs. Keep the nests pure and clean.

Cleanliness and intelligence are two requisites for successful butter-making.

Good shelter from the blasts of winter is cheaper than trying to feed grain to poorly housed animals.

Clean fence rows are one of the best indications of practical and profitable farming.

Time flies very rapidly. Put out an orchard, and even if it does take five or six years to come into bearing, you will have an orchard almost before you know it. One thing certain—if you refuse to set out trees because some waiting will be required you will never have an orchard.—*Mirror and Farmer.*

A man should not condemn a thing until he has at least given it a trial. We have observed, says an exchange, that those who sneer at intensive cultivation, extra heavy manuring, etc., are the men who have never attempted to practice them. A trial of these methods is very apt to give one some respect for them. Suppose you make a little experiment in this direction next season.

Waste places can be advantageously used for trees. When a farmer has too much land and does not care to sell, he should not allow it to grow up in any sort of wood that may take possession, but plow the land and put out young forest trees in rows, and cultivate them the first year or two. Black walnut and other valuable trees may be grown. It is a process that more than pays the interest on the land, and the field may be used for cattle pasture a portion of the time.

Prof. H. W. Wiley, Chief Chemist of the Department of Agriculture, believes that sorghum cane is to be the great sugar producer, and has a magnificent future before it. For the arid regions of the West, he thinks it especially fitted, as it has a wonderful capacity for resisting drouth. Its crop of 14 or 15 bushels of seed per acre now sells in the localities where grown at $1.25 per bushel for sowing crops for fodder, and in this way it produces a double profit.—*Rural World.*

The farmers of this country possess advantages for the prosecution of all developments of agriculture very much greater than those of any country on the globe. For variety and extent of soil and climate, we are unsurpassed. We have all varieties of surface, with a climate which in the Southern portion admits of the profitable culture of many of the most valuable productions of the tropics, while the Northern sections verge upon, but do not reach, the less-favored regions where too severe and enduring frosts entail scanty vegetation.

Many farmers have lived to a good age and have never experienced the convenience of a workshop upon their premises.—The best farmers today are those who are the best students, who are trying to understand some of the principles which underlie successful agriculture.—More and more the conditions of modern life and the demands of the industrial world require that work of every kind be directed by thought and skill.—Take the very best care of the common cow, and if she has anything in her she will surprise you at what even a common cow can do if she is encouraged.—Some dairymen talk a great deal about "breaking in" a heifer to milk, but the man who is already on good terms with his heifer knows no such ordeal.—*Mirror and Farmer.*

When nitrogenous crops are used for improving the soil, rotation is advisable. Clover should be grown on every portion of the farm, by seeding down a new plot every Spring. Some experimenters maintain that the shading of the soil by the clover is one of the advantages gained, as nitrification occurs more readily under such conditions. This may be demonstrated easily, as every farmer knows that where a board, piece of old carpet, or covering of any kind has covered the spot the soil becomes darker in color, is richer, and the presence of angle worms evidence the fact some change has occurred. When the land is shaded by clover, the nitrification in the soil is an easier process than when the land is exposed. Half a century ago the farmers "rested" the land by the fallow system, which simply permitted the growth of such indigenous plants as would appear and shade the soil, as well as derive nitrogen from the atmosphere. At the present day the intelligent farmer rotates his land by not allowing the same kind of a crop to grow on the land in succession, and uses clover to enrich his soil by deriving plant food from nature's storehouses of nitrogen.—*Philadelphia Record.*

Kerosene lanterns at the barns and stables are a fruitful cause of fire. We suppose people will continue to use them, regardless of the danger. But with true care exercised, there would be but few fires from this cause. There are two rules that should be strictly observed in the use of lanterns. 1. Never take a lighted kerosene lantern on to a hay loft. 2. Never set a lantern down in the barn, but instead hang it on safe hooks provided for the purpose, where if accidentally hit by man or horse it will swing freely instead of being knocked down and broken. As a precaution against fires from sparks on the roof, care should be exercised not to make brisk fires in the house from light, inflammable material, such as shavings, shingles, or light, fine wood of any kind, in the heat of the day, when the roofs are dry and hot from the scorching sunshine. Cinders from such fires, in a strong draft, are quite likely to arise from a chimney, and when falling on a hot roof are most sure to start fire. The exercise of thoughtful care on the part of the owners, or occupants of buildings, in the directions indicated, would prevent a large per cent of the losses now sustained, and is a matter too important to be overlooked.—*Mirror and Farmer.*

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Belden Paddock made the College a call on Monday.

Miss Ella Bain of Marysville visited College Tuesday.

Laura Day, '93, had charge of Prof. Lantz's classes three days this week.

Julia Pearce, Assistant Librarian, enjoyed a visit from her sister on Monday.

Olive Wilson, Third-year, has been kept from classes for the last week by sickness.

Miss Williams, of Illinois, the guest of Mrs. Winchip, visited the College, Monday.

Mrs. Bowman of Blue Rapids visited her sister and brother, Nora and George Fryhofer, on Wednesday.

Mrs. D. C. Milner attended Chapel exercises Tuesday, before leaving for her new home in Chicago.

Prof. Failyer represents the College at an institute in Garden City, this week. Mrs. Kedzie performs a like service at Russell, and Professors Lantz and Hitchcock address a meeting at Hiawatha.

John Fryhofer, Second-year, was called home to Randolph on Wednesday by the death of his sister. George and Nora Fryhofer, Third-year students, cousins to the deceased, attended the funeral on Friday.

The apple trees in that part of the College orchard lying south of the old vineyard have been grubbed out in the belief that the ground might be more profitably occupied by something else, as most of the trees were getting old and bore but little fruit. It is probable that after a few years cultivation the land will be used to extend the experimental vineyard.

If the peach trees on the College farm may be taken as an index, there will be few peaches raised in this section next year. A careful examination of the trees standing fails to reveal a single blossom bud that is not black in the center, and even on those trees which were laid and covered with straw the great majority of buds seem to be dead. It is probable that the warm weather through December and in the early part of January started them to such an extent that they could not withstand the severe cold the middle of the month.

To any one who has the time and the inclination, the grape cuttings in the Experiment Station propagating houses afford an interesting subject for study. There are cuttings from over one hundred varieties of grapes, arranged according to Prof. Mason's classification, which is based on their botanical characters and relations. This is by far the most satisfactory classification which has so far been proposed, and it is interesting to note the difference in growth of Labrusca, Riparia, Æstivalis, etc., and the effects of crossing them.

The seventh division of the Third-year class occupied the chapel rostrum Friday afternoon with the following declamations: E. H. Webster, "Blue Grass;" Dora Thompson, "Maelstrom;" E. C. Trembly, "A Specimen of Eloquence, by Otis;" Ora Yenawine, "Sunrise, by Everette;" Frank Yeoman, "Philosophy of Reform;" Myrtle Smith, "The Cynic;" G. C. Wheeler, "The Art and Science of Government;" Bertha Steele, "J. G. Blaine's Eulogy on James Garfield;" S. H. Creager, "Ignorance a Crime in the Republic;" Ada Rice, "Blessed be Drudgery." Rena Helder's piano solo, of her own composition, was a pleasing variation of the program.

The series of whole and piece root grafts made last year is being repeated this winter with the view to testing more fully the comparative advantages of the two. The series will be essentially the same as last year, with a few minor changes. Two other series have already been made and stored—one to test the effect of different degrees of temperature on grafts, the other to be treated with solution of copper sulphate of varying strengths in order to decide how strong it may be used without injuring the grafts. Mould is often troublesome in grafts which are stored in sawdust, and it is believed that the use of a solution of copper sulphate would prevent this.

GRADUATES AND FORMER STUDENTS.

Will Spilman, Third-year in 1888-9, visited College on Monday.

G. K. Thompson, '93, is imployed in the law office of Hazen & Munger in Topeka.

Mamie Polson, student in 1892-3, came down from Fancy Creek to visit friends this week.

J. E. Larrick, student last year, visits College today to attend the Hamilton exhibition.

W. S. Arbuthuot, '91, is back at Belleville practicing his profession after an experience of two or three months in holding down a fine claim in the Cherokee Strip, which he secured by making the run on the opening day.

A. A. Gist, '91, and Herbert Bender, student in 1891-92, were among the callers at the College yesterday.

Effie Gilstrap, '92, has gone to the California Mid-Winter Fair in the capacity of special correspondent for the Kansas City *Times*.

H. A. Hepler, student in 1890, has just returned from an extended visit with friends in Pennsylvania. He called at College yesterday.

H. E. Brown, student in 1890, is visiting with his brother. He came up from his home at Topeka and will remain to attend the Hamilton exhibition this evening.

Clay E. Coburn, '91, who has been in the employ of the Armours at Kansas City since graduation, has been put in charge of the Superintendent's office in the new Armour & Co. killing establishment.

The following is a list of the graduates and former students whose names appear on the program of the Teachers' Association to be held in Manhattan, February 10th: G. W. Smith, '93; Delpha Hoop, '91; W. E. Smith, '93; Elizabeth Edwards, '92; Ivy Harner, '93; Grace Wells, student in 1891-92, and Lillian Hawley.

P. S. Creager, '91, in a breezy letter from Topeka, says among other things: "*Smith's Fruit Farmer* [recently purchased by Creager and Waugh] is moving, and we hope will give the world evidence of being alive about the 15th. Under our contract, we must hold to this name until 1895, when we expect to launch the *American Horticulturist* or the *Western Horticulturist*. I wanted to call it the *Universal Horticulturist*, and adopt the old class motto, but we have concluded to aspire more modestly."

F. A. Thackrey, Second-year in 1891-2, now Instructor at the Indian School, Sac and Fox Agency, I. T., on Jan. 21st barely escaped drowning. He with four others in a wagon undertook to ford a stream so deep that the wagon floated partially, and in the fright of the two women all were thrown into the stream, the women and a crippled man clinging to Mr. Thackrey. An Indian boy swam out first, and after Mr. Thackrey had given up all hopes of saving himself and the three clinging to him were drowned, reached a pole to which he clung and was rescued. He writes that it still seems as if he had been dead, and the voice of the Indian boy was that of an angel calling him back to life.

The Salt Lake *Tribune* of January 20th, in a two-column account of the Legislature's visit to the Utah Agricultural College at Logan, gives the following paragraph to a member of the Class of '88: "The next visit was to the kitchen, presided over by Miss Abbie L. Marlatt, a Kansas production and a graduate of the Manhattan Agricultural College. She learned to cook there, and is now instructing the students in her department with such success that they prepared the daintiest luncheon ever destroyed by a hungry Legislature. Miss Marlatt had been requested to prepare luncheon for eighty, and had one hundred and fifty to feed. Like the brave woman she is, she never faltered, nor did her features lose that smile that was more cheering than even the good things prepared by her girls, but rose to the occasion, and lo, there were baskets full remaining when the last hungry one had departed. One and all wished Miss Marlatt all the pleasures that could be encompassed within the life of one mortal. The dining-room showed the natural good taste of the young ladies, harmony of color being added to neatness. As soon as the guests were seated the Ogden orchestra commenced playing, which was duly appreciated. The Ogden Glee Club had volunteered their services, and sang "Bold We March," with "Comrades in Arms" for an encore. The table—too much cannot be said of that, and yet the guests at the close of the luncheon could only look their appreciation. Roast turkey, dressing, salad, lemon ice, coffee, cake, and all the little delicacies of home manufacture that thrifty, loving young women could desire. They made an impression, as will be seen when the appropriation bill comes up for discussion."

The Weather for January.

Temperature—The mean temperature was 26.60°, which is 1.47° above normal. There have been thirteen warmer and twenty-one colder Januaries in the past thirty-seven years, the extremes being 38.30°, in 1858, and 12.35°, in 1886. The maximum temperature was 74°, on the 16th, and the minimun —14°, on the 24th —a monthly average of 88°. This is the highest temperature on the College record for January. The warmest day was the 16th, the mean being 53°; the coldest was the 24th, mean being 2.75°. The greatest range for one day was 50°, on the 16th; the least, 7°, on the 31st. The mean of the observations at 7 A. M. was 20.52°; at 2 P. M., 36.87°; at 9 P. M 24:52°. The mean of the maximums was 40.65°; of the minimums, 14.23°; the mean of these two being 27.44°. The mean temperature for the first ten days was 25.58°; for the second ten, 37.38°; and for the last eleven, 17.75°.

Barometer.—The mean pressure was 28.913 inches, which was .04 inch above normal. The maximum was 29.517 inches at 7 A. M. on the 24th; the minimum, 28.453 inches, at 2 P. M. on the 3rd—a monthly range of 1.064 inches.

Precipitation.—The total fall of rain and melted snow was .71 inch, which is .12 inch below normal. The total fall of snow was 1.2 inches, which is 3.4 inches below normal.

Cloudiness.—There was one day entirely cloudy, one five-sixths cloudy, seven two-thirds cloudy, two one-half cloudy, three one-third cloudy, two one-sixth cloudy, and fifteen clear. The cloudiness was 29, which is 13 below normal.

Wind.—The wind was from the north twenty-three times, south-west twenty-two times, south thirteen times, north-east nine times, west and north-west seven times, south-east five times, east four times, and a calm three times. The total run of wind was 7773 miles, giving a mean daily velocity of 250.74 miles, and a mean hourly velocity of 10.45 miles. The maximum daily velocity was 413 miles, on the 23rd, and the minimum 90 miles, on the 15th. The maximum hourly velocity was 33 miles, from 1 A. M. to 3 A.M. on the 17th.

Below will be found a comparison with the preceding Januaries:—

January.	*Number of rains.*	*Rain in inches.*	*Prevailing Wind.*	*Mean Temperature.*	*Maximum Temperature.*	*Minimum Temperature.*	*Mean Barometer.*	*Maximum Barometer.*	*Minimum Barometer.*
1858	....	2.50	.....	38.30	.....	....	.....	.....	.....
1859	4	1.50	SW	31.03	59	-3	.....	.....	.....
1860	1	.60	SW	29.97	70	-6	.....	.....	.....
1861	3	1.35	SW	23.61	60	-9	.....	.....	.....
1862	3	1.50	N	18.03	42	-6	.....	.....	.....
1863	2	1.47	SW	36.52	69	-4	.....	.....	.....
1864	3	.44	NW	23.17	60	-13	.....	.....	.....
1865	2	.33	NW	47.04	49	-5	.....	.....	.....
1866	....	.....	.....	.....	.....	....	.....	.....	.....
1867	2	.65	N	22.57	47	-12	.....	.....	.....
1868	2	.31	N	18.15	61	-12	.....	.....	.....
1869	8	1.15	SW	30 46	54	9	.....	.....	.....
1870	2	.05	SW	27.35	58	-3	28.79	29.30	27.90
1871	4	.53	SW	28.85	62	-7	.....	.....	.....
1872	2	.13	SW	24.90	51	-8	.....	.....	.....
1873	5	.84	NW	19.66	49	-14	.....	.....	.....
1874	2	.50	SW	26.41	60	-4	28.72	29.33	27.95
1875	3	.22	NW	14.87	48	-17	28.89	29.43	28.42
1876	0	.00	SW	33.85	62	-6	28.82	29.37	28.30
1877	2	.46	SW	25 20	64	-10	28.97	29.55	28.38
1878	6	2.35	NW	33.09	55	0	28.76	29.25	28.41
1879	....	.....	.....	.....	.....	....	.....	.....	.....
1880	3	.56	S	37.82	61	15	28.55	29.10	28.05
1881	4	.50	SW	19.35	49	-18	28.70	29.19	28.10
1882	4	.42	SW	31.64	60	-1	28.72	29.23	28.20
1883	3	.25	SW	18.02	55	-15	28.78	29 14	28.08
1884	1	.30	SW	21.46	63	-22	28.78	29 30	28.20
1885	4	1.08	SW	16.27	44	-18	28 68	29.10	28.00
1886	5	1.36	NW	12.35	51	-19	29.01	29.50	28.53
1887	4	.68	SW	22.05	62	-23	28 92	29 55	28.26
1888	2	.65	N	15.42	63	-26	29.24	29.86	28.60
1889	3	.78	N	27.84	53	-1	29.03	29.39	28.44
1890	5	2.31	NW	23.10	62	-19	29.04	29 55	28.40
1891	4	1.63	NW	29.44	57	-2	28.97	29 33	28.47
1892	4	.78	SW	22.25	64	-26	29.01	29.36	28 50
1893	1	.02	N	22.99	53	-1	28.90	29.33	28.39
1894	2	.71	N	26.60	74	-14	28.91	29.52	28.45
Means	3	.83	SW	25.13	57	-10	28.87	29.37	28.29

WIND RECORD.

January.	*Total Miles.*	*Mean Daily.*	*Maximum Daily.*	*Minimum Daily.*	*Mean Hourly.*	*Maximum Hourly.*
1890	5980	192.90	419	64	8.04	28
1891	6842	220.70	691	79	9.20	56
1892	6517	210.20	460	31	8.76	29
1893	6667	215.00	496	55	8.96	36
1894	7773	250.70	413	90	10.45	33
Means	6756	216.10	496	64	9.08	34

E. R. NICHOLS, Observer.

Short Course in Agriculture.—Program.

TUESDAY, FEBRUARY 6.

10:30 Speculation in Farming.....Pres. Fairchild
1:30 Geology of Soils.....Prof. Failyer
3:00 Principles of Economic Entomology.....Prof. Popenoe

WEDNESDAY, FEBRUARY 7.

10:30 Maintaining the Fertility of the Farm...Prof. Georgeson
1:30 Cultivation of Orchard Fruits.....Prof. Mason
3:00 How Plants Live.....Prof. Hitchcock

THURSDAY, FEBRUARY 8.

10:30 Lameness.....Dr. Mayo
1:30 Birds and the Farmer.....Prof. Lantz
3:00 Home Grounds and Farm Buildings.....Prof. Walters

FRIDAY, FEBRUARY 9.

10:30 Lightning Conductors.....Prof. Nichols
1:30 History and Description of Prominent Breeds of Cattle.....Prof. Georgeson
3:00 The Dairy Interest.....J. E. Nissley
7:30 Corporations, Monopolies, Trusts.....Prof. White

SATURDAY, FEBRUARY 10.

9:00 Nitrogen in Agriculture.....Prof. Failyer
10:30 Motors for the Farm.....Prof. Hood

MONDAY, FEBRUARY 12.

10:30 Treatment of Plant Diseases.....Prof. Hitchcock
1:30 Fermentation and some of its Relations to Agriculture.....Prof. Willard
3:00 Veterinary Obstetrics.....Dr. Mayo

TUESDAY, FEBRUARY 13.

10:30 Stockbreeding—Laws of Heredity.....Prof. Georgeson
1:30 Farm Insects.....Prof. Popenoe
3:00 Poultry as a Farm Industry.....Hon. Jno. C. Snyder
7:30 Initiative and Referendum.....Prof. Walters

WEDNESDAY, FEBRUARY 14.

10:30 The Farm Garden.....Prof. Mason
1:30 Preservation and Preparation of Foods.....Mrs. Kedzie
3:00 The Impurities in Water.....Prof. Failyer

THURSDAY, FEBRUARY 15.

10:30 The Irrigation Question.....E. B. Cowgill
1:30 Horse-breeding as a Component of General Farming.....F. H. Avery ['87]
3:00 Insects of Orchard and Garden.....Prof. Popenoe
7:30 Swine Husbandry.....Judge W. B. Sutton

FRIDAY, FEBRUARY 16.

10:30 Stock-feeding.....Prof. Georgeson
1:30 Wheat Rust.....Prof. Hitchcock
3:00 The Family as a Factor in Farming.....Pres. Fairchild
7:30 Dehorning vs. Horning.....Hon. F. D. Coburn

SATURDAY, FEBRUARY 17.

9:00 Colic in Horses.....Dr. Mayo
10:30 Farm Accounts.....Secy. Graham

COLLEGE ORGANIZATIONS.

Student Editors.—Rena Helder, Stella Kimball, and G. L. Christensen.

Webster Society.—President, J. M. Williams; Vice-President, J. V. Patten; Recording Secretary, B. F. S. Royer; Corresponding Secretary, F. E. Uhl; Treasurer, A. C. Cutler; Critic, E. H. Freeman; Marshal, A. G. Bittman; Board of Directors, C. R. Pearson, E. H. Webster, E. L. Brockway, G. A. Dean, and R. P. Newman. Meets Saturday evenings at 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta.—President, Jennie R. Smith; Vice-President, J. C. Christensen; Recording Secretary, Elva L. Palmer; Corresponding Secretary, Geo. W. Fryhofer; Treasurer, Fannie Parkinson; Critic, Lucy Waters; Marshal, W. H. Phipps; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, G. L. Christensen, Stella Kimball, C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Ionian Society.—President, Phœbe Turner; Vice-President, Hortensia Harman; Recording Secretary, Minnie L. Copeland; Corresponding Secretary, Maggie A. Correll; Treasurer, Lynn Hartley; Critic, Mary Lyman; Marshal, Rena Helder; Board of Directors, Ethel Patten, Maud E. Kennett, Blanche E. Hayes. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Hamilton Society.—President, C. R. Hutchings; Vice-President, E. L. Frowe; Recording Secretary. C. N. Brobst; Corresponding Secretary, A. P. Carnahan; Critic, V. I. Sandt; Marshal, J. A. Hoge; Board of Directors, J. A. Scheel, B. W. Conrad, F. A. Dawley, F. Smith, C. S. Evans. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

January 27th.

The Websters were called to order promptly at 7.30 by Pres. Williams. Roll call. C. D. McCauly led in devotion. Minutes of last meeting were read, corrected, and adopted. The Board of Directors elected at the last meeting were inaugurated. C. Farman, H. N. Johnson, C. M. Park, W. T. Pope, and J. E. Trembly were initiated as members of the Society. The question, Resolved, "That there is more pleasure in pursuit than in possession," was argued by E. C. Trembly and J. W. Finely on the affirmative, and by J. C. Wilkin and J. B. Dorman on the negative. The main points mentioned by the affirmative are as follows: Pleasures of earning riches, especially the first dollar. The poor or moderately circumstanced are happier than the rich. The rich, even, pursue wealth for pleasure, not because of the need of it. Pleasure in pursuing education and fame; we are never in full possession of either. Life would be worth little if we were naturally endowed with all we wished. All poetry bears on the affirmative side of the question. In reply the negative said that: There is greater pleasure in the possession of riches than in earning them, especially the first dollar. Pleasure is to be found, not in the worry of pursuing fame, but in the possession of it. Would be no pleasure in study if we did not gain a college education thereby. Pleasure of the Colonists at the successful outcome of the Revolution was also cited. Question was decided in favor of the negative. Following debate J. M. Dill presented an essay entitled "Essay Writing." It indicated thought, was short and good. R. W. Bishoff then delivered a declamation entitled "Advanced Thought." After ten minutes recess, F. Rummel ground out several excellent tunes from the Webster music box. Which were appreciated. A. E. Fuhlhage presented the news of the week. "The Moral Influence of the Daily Papers," was discussed by E. H. Webster and the Society. "Unfinished Business" followed. Under "New Business" the order of "Report of Critic" was changed to immediately after "Discussions." The Society adjourned as usual under the order of "New Business," at 10:46.

F. E. U.

January 27th.

President Hutchings called the Hamilton Society to order for his first time. Prayer, G. G. Boardman. A long and interesting program was opened by an essay, "The Beauty of Sleep" by F. B. Dodds, followed by G. H. Dial with a discussion. M. L. Heckart in an essay gave us a description of Montgomery Co. his home. A select reading by W. O. Staver was well received by the Society. An interesting debate on the question, "From which does the mind derive the more knowledge, reading or observation?" was argued affirmatively by C. F. Pincomb and F. E. Smith, whose arguments were refuted by C. A. Chandler and O. E. Noble. The affirmative argued that a person traveling through a foreign country of which he had never read, would pass all places of interest by unnoticed, while a person who is well read in the history of all these places would make it a point to visit them. Take the World's Fair, for example, what we noticed most there was those things of which we had read and heard most about. Many an interesting exhibit was undoubtedly overlooked because we had never heard of it. Take the person who has never read history to the monument of the battle of Bunker Hill, to him it will appear as a blank piece of masonry; but take the historian to that monument and the past will rise before him till he can see the land fertilized by the blood of his forefathers made free by the Declaration of Independence. In agriculture we learn that after the mention of the printing press agriculture soon rose from a standstill to its present high standard. All this goes to show that it is from books that we derive our knowledge. The negative in their defense claimed that although the student of books may know a great many things about the Bunker Hill battle and monument, yet the person who witnessed the battle had the impression stamped upon his mind in a manner never to be forgotten, while the average reader remembers only for the time being. What would the student of books know of running a steam engine, blacksmithing, carpentry, or any other trade. Such knowledge only comes from observation and practice. Often times a picture will give a person a more vivid idea of an article or scenery than whole pages of description. Our greatest politicians, orators, and lecturers were students of observation rather than books. The debate was on a whole very evenly argued, but the Society decided in favor of the negative by a small majority. J. W. Holland next favored the Society with a fifteen minute oration on "A Much Needed Reform." Mr. Holland has the thought and delivery which promise to make a great orator of him some day. W. H. Painter presented an excellent edition of the Recorder. The titles of some of the leading pieces were "The Science Call," "The Dream," and "The Bighead." A. L. Peters as music committee secured the services of a number of the members, and favored the Society with a chorus. After disposing of the usual amount of business the Society adjourned.

A. P. F.

January 26th.

With a larger attendance than usual, Alpha Beta exercises were opened buy a violin solo from R. W. Clothier. After devotion, Alice Shofe recited a poem on that notorious character, admired yet hated by every patriotic heart, the traitor Benedict Arnold. "Knots"—weaver's, lover's, etc.,—was the theme of a declamation delivered by J. B. S. Norton. The debate was full of interest and information. "Should fraternities be organized in this College?" is a question though favored by a few would on the whole receive violent opposition. The universality of secrecy, the power of teaching in secret, and the advantage of secret frendship were forcibly presented. On the other hand, the temptations of secret organizations were exposed, and numerous examples of evil resulting from fraternities were brought up. The affirmative was argued by W. H. Phipps and Alice Ridenour: Lucy Waters and J. M. Westgate refuted the points presented, and won the debate unanimously. The Gleaner, W. A. Harling, editor, was arranged in the form of the ancient scroll. and was very long to say the least—it being six feet and over. It was by far the best paper that has been presented for sometime. Sarah Cottrell and Lorena Clemens entertained the Society with a very practical vocal duet, "People will Talk," the organ accompaniment by Grace Secrest. Extemporaneous speaking was lively, and had to be interrupted to resume the orders of the day. Some of the subjects briefly discussed were, Scientific Club, Choice of Authors, U. S. Treasury, National Banks, and Free Coinage. The programme was closed by a vocal duet, "Oh, This World is Sad," by R. W Clothier and G. W. Fryhofer.

G. W. C.

Rights of Wheelmen.

The question as to the rights of wheelmen on the road has again been raised.

It has been asserted that they had the right of way over all other sorts of vehicles, and that they had more privileges.

Without a doubt there are some misguided wheelmen who act and conduct themselves on the road as if they had more rights than all the rest of vehicle drivers put together. But they are only misguided.

Bicyclers have just the same rights as owners of any other vehicles, are regarded as the same in the eye of the law, and if they attempt to take more rights they will find themselves in trouble.

Underwood, in his road book, which is an authority on such matters says:—

"It is well settled that bicycles and tricycles are carriages within the meaning of the law, and their riders are entitled to the same rights and subject to like duties and liabilities as the riders and drivers of carriages and other like vehicles, and may go upon those parts of the road where other vehicles can, and on the other hand should not go where others cannot. Wheelmen have their rights and duties when traveling on the highway."

He quotes from court rulings as follows: "The highway is established for the convenience of travelers, and the use of it for any game or sport that actually exposes or puts to hazard the personal safety of the traveler thereon is not justifiable and subjects the party thus using the road improperly to the payment of all damages occasioned thereby to travelers."

As a bicycle is a vehicle like the others, this decision applies to it:—

"Persons in light carriages for the conveyance of persons only have occasion and of course a right when not expressly limited by law to travel at a high rate of speed, so that they do not endanger others. But all foot passengers, including aged persons, women, and children, have an equal right to cross the streets, and all drivers of teams and carriages are bound to respect their rights, and regulate their own speed and movements in such a manner as to not violate the rights of such passengers. Carriages cannot go upon the sidewalk and parts of the way especially constructed for foot passengers. When persons meet each other on a bridge or road traveling with carriages, wagons, carts, sleds, sleighs, or other vehicles, each person shall reasonably drive his carriage or other vehicle to the right of the middle of the traveled part of the bridge or road, so that their respective carriages or other vehicles may pass each other without interference."

Cold Bridle Bits.

During the bitter cold weather in winter much suffering is thoughtlessly inflicted on horses by putting cold bridle bits into their mouths. If the person who does this will apply his tongue to a piece of frosty iron on a frosty morning he will understand at once what the suffering to the poor brutes is. To slightly warm the bits before putting them in the horse's mouth would require only a small expenditure of labor. This can be done by rubbing them with a blanket or other cloth a moment or two, if other means of warming are not at hand. The beneficial results in the gentleness of the animal will amply compensate it.—*Baltimore Sun.*

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

WM. KNOSTMAN, the Clothier, offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry, and Gold Spectacles, also Musical Instruments.

E. K. SHAW, Jeweler and Optician. Watches, Jewelry, Silverware, Spectacles, Clocks, Fountain Pens, Gold Pens, etc. Repairing of watches, Clocks, Spectacles, and Jewelry done promptly and skillfully. A written guarantee given with all warranted watch work. 308 Poyntz Ave.

DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

DENTIST.

DR. G. A. CRISE, Dentist, 321 Poyntz Ave. The preservation of the natural Teeth a Specialty.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

SHAVING PARLOR.

6 BATHS, $1.00 cash. 12 shaves, $1.00 cash, Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, South Second Street.

GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

THE INDUSTRIALIST.

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Historical society

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Professor of Horticulture and Entomology, Superintendent of Orchards and Gardens.

DAVID E. LANTZ, M. Sc.,
Professor of Mathematics, Librarian.

JOHN D. WALTERS, M. Sc.,
Professor of Industrial Art and Designing.

IRA D. GRAHAM, A. M.,
Secretary, Instructor in Book-keeping.

OSCAR E. OLIN,
Professor of English Language and Literature.

MRS. NELLIE S. KEDZIE, M. Sc.,
Professor of Household Economy and Hygiene.

MRS. ELIDA E. WINCHIP,
Superintendent of Sewing.

OZNI P. HOOD, B. Sc.,
Professor of Mechanics and Engineering, Superintendent of Workshops.

ALEXANDER B. BROWN, A. M.,
Professor of Music.

JOHN S. C. THOMPSON,
Superintendent of Printing.

FRANCIS H. WHITE, A. M.,
Professor of History and Political Science.

CHARLES C. GEORGESON, M. Sc.,
Professor of Agriculture, Superintendent of Farm.

EDWIN B. BOLTON, Captain 23rd U. S. Infantry,
Professor of Military Science and Tactics.

ERNEST R. NICHOLS, A. M.,
Professor of Physics.

NELSON S. MAYO, D. V. S., M. Sc.,
Professor of Physiology and Veterinary Science

JULIUS T. WILLARD, M. Sc.,
Assistant Professor of Chemistry.

ALBERT S. HITCHCOCK, M. Sc.,
Professor of Botany.

SILAS C. MASON, M. Sc.,
Assistant Professor of Horticulture.

MISS JOSEPHINE C. HARPER,
Instructor in Mathematics

MISS ALICE RUPP,
Instructor in English.

HOWARD M. JONES, A. B.,
Rhetorical Instructor.

ASSISTANTS AND FOREMEN.

C. M. BREESE, M. Sc., Assistant in Chemistry.
JULIA R. PEARCE, B. Sc., Assistant Librarian.
BESSIE B. LITTLE, B. Sc., Assistant in Sewing.
GRACE M. CLARK, B. Sc., Stenographer in Executive Office.
F. C. SEARS, B. Sc., Foreman of Orchards and Gardens.
WM. BAXTER, Foreman of Greenhouses.
W. L. HOUSE, Foreman of Carpenter Shop.
E. HARROLD, Foreman of Iron Shop.
L. A. MCKEEN, Foreman of Farm.
C. A. GUNDAKER, Engineer.
A. C. MCCREARY, Janitor.

ASSISTANTS IN EXPERIMENT STATION

F. A. MARLATT, B. Sc., Entomology.
F. C. BURTIS, B. Sc., Agriculture.
D. H. OTIS, B. Sc., Agriculture.
M. A. CARLETON, M. Sc., Botany.

College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

HOW TO READ A DAILY NEWSPAPER.

BY PROF. HOWARD M. JONES.

GREELEY said, "The way to resume is to resume." The way to read a daily newspaper is to read it. But how can this best be done from the student's standpoint? The effort is to answer that question. But first, attention should be called to a great omission on the part of students. A recent investigation proves that very many of our students are not reading. The stigma of "impractical," "theoretical," "lacking in common sense," etc., which is attached to college students by many business men is due to the student's ignorance of current events more than any other cause. To know about the politics in the time of Hamilton and Jefferson is good, but to be familiar with present politics is better. Often the clerk in shirt sleeves, with his newspaper lying on the counter within easy reach, is better informed on current topics than is the college senior. When the clerk finds this out, his respect for "higher education" diminishes.

Go into the College reading room and read the dailies; they were put there not for ornament. Perhaps one can read more conveniently at his boarding place; if so, let two room-mates contribute a cent each per day and have their own paper. It is essential that the student read some paper, since not "book learning," but "general information" is the test which will be ultimately applied to him.

But given the paper, how can a busy student read all that matter? The attempt looks like "madness," but a little "method" will help amazingly. A few hints may be useful:—

1. *Read by elimination.* It is great art to get rid of what one does not need. No paper intends all its contents for all its readers. Take, for example, one of our leading Kansas dailies. It is an eight-page, seven-column paper; that is, it has fifty-six columns of matter. The copy examined had twenty-three and a half columns of market reports, time tables, "ads.," notices, etc. All this matter is for reference only. Never look at it save when you have occasion to do so. This eliminates at one sweep nearly fifty per cent. But how is he to handle the remaining two columns?

2. *Read by location.* When one goes to market, he visits but few stores, for he knows where to go and what to call for. The daily paper is a news mart which must be learned. Learn your daily so that you can locate what you want. Every paper has its own arrangement. Did you ever see a newspaper man read exchanges? He knows just what he wants, and just where to get it. He can "do papers" as rapidly as an expert clerk can put up packages. The student is "rushed" for time, or ought to be; he must read not by natural selection, but for "a survival of the fittest;" therefore, he must learn just where he can put his eye on the most important, and then the next most important, and so on, always reading in that order. The power of location is a great time-saver—the desideratum. Read to get the most in the least time; therefore,

3. *Read rapidly.* Blest be the inventor of head lines, topic displays, and paragraph divisions. To show their wonderful utility, take, as an example, a President's message, or a Governor's proclamation, or the text of a treaty or a bill before Congress. The student has no time to read in full. Read the head-lines, dip into the paragraphs here and there, then turn to the editorials, and in a third or a half column can be found the gist of the whole thing. It is the editor's business to thrash over such straw and give the busy public net results only. Often the head lines are sufficient; e. g., "Paid the Penalty," "Anarchist Vaillant Guillotined in Paris," "His Tragic End," then follows a sub-line caption which gives all the essentials. It is unnecessary to read the remaining column; thirty seconds is all the occurrence is worth. "Mitchell Knocked Out In Three Rounds" is enough; the two pages of disgusting details omit. "Drunken Dago Draws a Dirk." Let him draw—hurry on. "Darkies at Dance Rip Each Other with Razors." Let them rip, and speed on. When it comes to drunks, police news, rapes, divorces, murders, scandals, and all sensational matter, read only the head lines, and then at full speed. It is a very serious question whether the whole field covered by the title "Crimes and Casualties" should not be read by elimination. A great help in acquiring this rapid reading is to

4. *Read regularly.* The intermittent reader loses the connection; there are so many threads in the daily news that it is easier to keep up than to catch up. An example: "Situation in Brazil Unchanged." The regular reader has to go no farther—he knows what the situation was yesterday. He got it with less time and effort yesterday when displayed as news than he can today by inference from any commentaries on facts he is unfamiliar with. But, best of all, regular reading forms the newspaper habit, which is almost a liberal education in itself. Once formed, it will stay with a man through life, giving him an amazing fund of knowledge.

At this point it is well to add a caution or two: Don't get your opinions from the dailies. It is their business to furnish you the facts only. Remember they are in no sense literature, and must be read guardedly; nor are final values determined from them.

When a student once learns to read by elimination and location, doing it rapidly and regularly, there will be no trouble in finding the required time, for a quarter or a half hour at most will suffice.

PRACTICE MARCHES.

BY PROF. EDWIN B. BOLTON,
[Captain 23rd Infantry, U. S. A.]

PRACTICE marches are tactical exercises which are gradually coming into the routine of our army life. They are a product of the necessity of the times, and are designed to train soldiers thoroughly in the multifarious duties of an exacting field service—a training which experience dictates, and modern methods demand should be learned, before approaching the presence of an enemy in hostile array. They combine principles which may be defined as embracing the domain of both drill regulations and tactics, too, as their functions require a literal execution of the prescribed rules for the former, and, at the same time, afford a liberal opportunity to cultivate a genius for a conception of the latter. This is true, whether the body in march consist of a squad, a company, a batallion, or a regiment. Similar practices of bodies of troops larger than a regiment approach the dignity of "army maneuvers."

Until within the past five years, campaigns against Indians, during their hostile raids and villainous depredations on frontier settlements, always afforded our soldiers opportunities enough to gain partial experience in this line, and supplied that want for which the practice is now introduced. Since then, however, the Indian having become quite docile, and, excepting only the rare event of an occasional outbreak,—such as the Pine Ridge affair at the close of 1890, when the Seventh Regiment U. S. Cavalry gave Two-Strike's band a sound drubbing which they will never forget,—the opportunities for field service have ceased; and the ranks are, owing to constant discharges and new enlistments, pretty nearly filled up with men who, though probably well drilled in the regulations, are wholly unfamiliar with, if not totally ignorant of, the practical manner of executing in the field the principles learned on the drill ground, and likewise other duties which can only be acquired through practical experience in the field.

In order, then, to teach and train soldiers in the art of marching, camping, scouting, maneuvering, outpost duty, reconnaissances, and inuring themselves to a ready facility for doing, an exercise, which is called, in military parlance, "practice march," has been established. It consists in sending a body of men out from the Post for the purpose of executing certain instructions of a military nature, which may be accomplished in a few hours, a whole day, or several days. The body sent out may consist of infantry alone, cavalry alone, light artillery alone, or any combination of these three arms.

Soldiers rather enjoy this work, especially when the variety is sufficient to season,—the spice of life,—and I believe will prove far more constant under a liberal practice of it than they have been under the old humdrum—the daily routine of drill and fatigue, and fatigue and drill, as practiced in recent years.

To illustrate: Several infantry companies might be marched out ten miles in different directions, and back again the same day, estensibly to test the marching capacity of each company, but incidentally if not actually to teach the men— as the numerous skinned heels and blistered toes will readily testify on the return—that high heels, narrow toes, ill-shaped and ill-fitting shoes will not do to march in. This is a lesson which practice only will teach.

Having taught the men what to expect on the march and induced them to shoe themselves comfortably, the same companies might be sent over the same roads, to camp over night, and return the next day, in the mean time instructing the men in the duties of ad-

vanced guard, rear guard, flankers, and picket duty at night. A few men from some other company, but dressed in different uniforms in order to distinguish them readily, might be sent out as scouts to represent an enemy who is opposing their march. This will give more zest to the *qui vive* of the vanguard, flankers, and sentinels.

A battalion might be sent out a specified distance in heavy marching order, each man carrying his own baggage and three days rations, with instructions to go into camp and establish out posts and patrols. With view of surprising and attacking the camp by another body, an officer might be sent out with a small squad to make reconnaissance. He will gather all desired information as to the situation of the camp, the topography of the ground, the strength and position of the sentinels, pickets and reserves, etc. From this information, the plans of approach and attack by the second battalion are determined.

Without further tedious illustrations which unduly monopolize space in a short article, suffice that to say many problems can be readily conceived for execution by troops who are skilled in the drill regulations, and which will excite interest and arouse enthusiasm in the hearts of the participants. At the same time, they learn to march, to camp, to do guard duty, besides becoming impressed with the necessity of closely watching, carefully scouting, and a diligent performance of all duties.

To the officer, these lessons are of even greater advantage, because they teach him that there are possibilities of thousands of failures in the execution of the many devised plans which are dependent on each other for the accomplishment of one end. A scout may fail to report; a detachment may fail to come to time; an unexpected movement of the enemy may develop, which necessitates change in your own plans; a courier may fail to deliver a message at all, may deliver it incorrectly, or when properly delivered it may be misunderstood; a bridge may be burned which was depended on, and your assistance is lost or has become delayed; muddy roads may prevent altogether, or delay the timely arrival of help. These and many more are the experiences gained in "practice marches," and a continued practice in which will enable him to judge discreetly and arrive at the most reasonable degree of probability of success.

UNREST.

BY PROF. O. E. OLIN.

ANYTHING that stirs a nation's life frees and sets in motion elements that, before they come to rest again, will crystallize into new and more brilliant forms. The great law of advancement will have it so; and whether we believe in an over-ruling providence or in self-acting evolution, we have faith in the upward trend of things. True, the past is strewn with wrecks of nations and of systems; but of all that has been cast aside there is nothing that the nineteenth century would willingly accept, or that it could with profit build into its own enduring structures.

Nothing more profoundly impresses the earnest student of history than to see in the whole story of the world's life a line of uninterrupted progress; to see that no nation has fallen that was fit to stand; that even the Dark Ages, in their hope and help for mankind, were above the palmiest days of Rome; to see that nations are purified by the refiner's fire, and even in the throes of revolution are lifted into clearer light.

It is not, therefore, the part of wisdom to bewail the widespread unrest, the friction of opposing forces, the drifting of loosened elements that mark the transition from one stage to another. It may be wise to fear them, as one does any fitful and undirected energy. But surely at such a time earnest and thoughtful men should be most active and most resolute.

It is the opportunity that comes to but few generations. And all that is truest, soundest, best in human life should be put forth to control the energy that so easily becomes destructive and direct it in useful channels; to seize the then mobile elements and powers of civilization and mold them into better educational and social privileges, better political and administrative forms, and better adjustments of industrial life. These things can usually be best accomplished when unrest is deepest and disintegration is surest, and the sensitive activities of life are quivering under new impulses. At such times communities and nations may accomplish, in a few years, what centuries have labored for.

And all this can be done without danger to social and national life if wise and honest men will allow themselves to come face to face with the problems; For when a question is fairly and intelligibly stated, the common sense of the people may be trusted to choose the right.

Let no man, then, be troubled when the country enters upon a "period of unrest." In its confused tones may be heard the voices of the morning. Its sullen murmurings may be the under-tones of a richer diapason. Beyond its stormy horizon may lie prospects fair and bright, whose splendor far surpasses the beauty of today. But let every man see to it that he meets the responsibility that this opportunity gives; that he counts his power among the forces for good; that with all his energy he shall help range public opinion on the right side of every problem proposed for solution.

With such conditions, the predestined end of every conflict is good. Our century has proved it to be true; other nations have proved it to be true; the history of the race has proved it to be true. Who shall doubt it?

SMALL FARMS.

BY PROF. G. H. FAILYER.

IT is gratifying to see how readily farmers who have been accustomed to broad acres that yield medium to meager crops from the still more meager tillage they receive, contemplate with composure the necessity, not to say advantage, of small farms. They realize that this change in size of farm implies changes in many other ways. The preparation of the soil for the crop, the after culture, the kind of crop grown, and the care to save it and to keep up the fertility of the land, must all be looked after. To the small farmer who would make his living from a few acres, all of these mean something far different from what they have meant to our average Kansas farmers.

A recent trip to the Arkansas Valley where, for the past two or three years, successful operations have been limited to a few acres by each farmer, owing to the scarcity of water for irrigation, has shown that our farmers very readily adapt themselves to changed conditions. Absence of water from the supply ditches at the most critical times, because none flows in the Arkansas river, has caused many residents of the Valley to pump water by wind power from the sands below to water their grounds. The capacity of these plants is necessarily small. One wind mill and pump may suffice for eight or ten acres of land, not more. Of course it stands them in hand to make the most of the ground, for whether the crop be of little or much value per acre, practically the same amount of water will be required. These people fully realize this, and do not regret the necessity under which it placed them.

With true Kansas energy and adaptability, they are solving for themselves the problem of how to farm the Arkansas Valley. They fully realize that under the circumstances in which they are placed, much more thought must be given to their work. It is not simply a matter of putting in one or a few crops that have their long and regular periods of seed-time, culture, and harvest; but such a variety must be selected as to most fully occupy both the farmer and the soil. Crops in which skill in growing, harvesting, and marketing count for much, are chosen. The farmers of that portion of western Kansas where water is within easy reach by wind mill pumps seem in a fair way to rank the highest in intelligent effort to make the most out of the forces and appliances with which they work.

This is one of the compensations of irrigation. The same amount of land may be made to yield much greater returns, but to do this, more thought must be given the work. The people of such regions become well-to-do, not to say wealthy; they are refined and educated. Irrigated countries sustain a greater population per square mile. The people are collected in villages and hamlets. Their great variety of productions gives them a good living, and an opportunity to make their surroundings pleasant and artistic.

How to Tell a Good Horse.

A writer for the *National Stockman* says: "Unless a horse has brains, he is not teachable. A horse that has breadth and fullness between the ears and eyes will not act mean nor hurt any one. The eye should be full and a hazle color, the ears small and thin and point forward, the face straight, with square muzzle and large nostrils. The under side of the head should be well cut under the jaw, with jaw bone broad and apart under the throttle. The back short and straight, and square rump, high withers, shoulders well set back, and broad but not deep in the chest, fore feet short, hind legs pretty straight, fetlocks low down, pastern joint short, with a round, mulish foot. There are all kinds of horses, but the animal that has all these points is almost sure to be graceful, good natured, and serviceable."

FARM NOTES FROM VARIOUS SOURCES.

Practicing rotation in the production of crops is not only a most excellent course for preventing soil exhaustion, but the best means for preventing the multiplication of weeds and insects.—*Germantown Telegraph.*

Hurried work in farming is work half performed, and results in loss of crops. The best crop results come only from work thoroughly done. One acre well manured brings as large crop products as the same amount would if applied to two acres, and with half the labor.

By sowing various grains together for a forage crop, you gain in the feeding value of the product. Peas, oats, and barley make a combination that may be used to good advantage. It is on the same principle that mixed grasses make best pasture.—*Practical Farmer.*

Grain in the bin is much more free from danger than while it is in the stack. It is wise never to defer the threshing longer than is necessary. If the grain happens to show any moisture after it is in the bin, put in some pieces of tiling or bricks as an absorbent.—*Practical Farmer.*

The management of a hundred-acre farm is a matter that may well engage the exclusive attention of an able man. It takes more brains than it does to run a country store, or a saw-mill or a hotel, or any of a dozen other things. The man who is able to do it successfully has no need to be ashamed of his occupation.—*Practical Farmer.*

What if you fail in business? You still have life and health. Don't sit down and cry about mishaps, for that will never get you out of debt, nor buy your children frocks. Go to work at something, eat sparingly, dress moderately, drink nothing exciting, and, above all, keep a merry heart, and you'll be up in the world.—*Franklin.*

If the land of our farms could be brought up to the highest point of productiveness, the yield of the various products would be immensely increased and the profits proportionately. The great need of our farms is more manure, and the need is so pressing that it should serve to enforce the importance of saving all manures that are made on the farm.

Live-stock raising improves the soil and increases the production of good crops of grain and grass, and these crops are much more profitably marketed through the very medium that has helped you to produce them than if sold direct in their original form. Besides this, the profit in feeding stays at home instead of going into some other man's pocket.—*Rural World.*

Prof. Henry says: "To those young men who say they are not able to take a short course, let me urge a change of statement. Rather let it be that they cannot afford to stay away. A winter spent at a good agricultural college should be worth a thousand dollars to any young man who has the material in him. I believe it will fully pay a good interest on the investment."

The improvement in the horse markets is encouraging as the new year opens and the industrial interest develops. Horses must be had, and while good horses are in demand at good prices, the million of scrubs and small horses are pouring in to be sacrificed at less than it costs to raise them. For future markets raise horses suited to special classes and the best of each class. Raise good horses or none, should be the motto of the farmer and horse-breeder.—*Live Stock Journal.*

An Illinois farmer says he got rid of Canada thistles by taking a clod crusher made of two inch plank, loaded it with as much stone as the horses could draw and broke the thistles down flat, then plowed them under deeply. The plan succeeded perfectly. It seems that their entire vigor, vitality, and substance was in their tops, as they were ready for scattering the seeds. They were, it is said, entirely destroyed. and a market gardener raised vegetables on the land the next season. Not a sign of a Canada thistle has been seen on the ground since.

Don't Want a New Idea.

There are a good many people who are really afraid to get new ideas for fear they interfere with their old methods of doing things, says the *Drainage Journal.* They are willing, yea, prefer, to follow their old methods, even if they do not pay, rather than to adopt a new method which promises to pay—even when convinced that the new method would pay if they followed it up. "No, no; I prefer the old way. My father did this way, and he got through the world." Yes, your father did get through the world, and that is about all that can be said of him. He didn't leave much behind that is good and noble to be remembered.

Some farmers go on planting and plowing about the same way their daddies did. The soil is wet when it ought to be dry, and dry and hard and cloddy when it ought to be fine and moist. But it makes little difference to them; they would not think of tile draining their land if they really thought it would double their crops—their daddies didn't and they will not. There are hundreds of men who do poor work, and are really hard pressed to live, and they talk and feel that this is a prison house. They are all the time grumbling and complaining. They need, more than anything else, to put themselves into the current of better ideas, better methods, better thought, and then they will have better success.

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Julia Spohr was a visitor at College on Thursday.

Secy. Graham's oldest son, Lloyd, is quite ill from a relapse of pneumonia.

Mrs. C. A. Garretson and Miss Bolton were callers at College on Wednesday.

Lilly Eakin, First-year, has been kept from classes for the past week by sickness.

Prof. Olin lectured last evening in the High School Course at Cottonwood Falls.

Mabel Gilespie enjoyed a visit from her cousin, L. A. Walker of St. George, Thursday.

Sadie McCormick, of Zeandale, visited College Monday, as the guest of Sadie Stingley, Third-year.

Regent Secrest found time to attend most of the lectures in the Short Course in Agriculture, this week.

Miss May Morley of Saginaw, Michigan, visited College, Thursday, in company of her cousin, Mrs. Olin.

Prof. Hitchcock has an article in the current number of *Science* entitled "Variation in Spores of Corn Smut."

S. H. Creager, Third-year student, has just been appointed Manhattan correspondent of the Topeka *Capital*.

Mr. and Mrs. A. A. Cottrell, of Wabaunsee, were among the visitors who attended the Chapel Exercises Friday.

Mr. M. T. Kelsey, of Oakland, called upon his cousin, Maud Kennett, student in Third-year classes, during the early part of the week.

Fred Toburen and N. Christensen, of northern Riley, visited College and attended lectures in the Short Course, on Wednesday and Thursday.

J. B. Harman, Second-year in 1892, returned to College this week. Since last at College he has been busy on his farm, but now intends to complete the course.

Wm. Anderson, student, while pruning trees last Saturday, accidentally cut his knee, and as a result has been somewhat lame. The cut, however, was not serious.

Messrs. Crane & Co., the well-known paper makers of Dalton, Mass., have the thanks of the Printing Department for liberal samples of their fine bond and parchment papers for class illustration.

Mr. and Mrs. Thos. Scanlon, Mr. Phillip Scanlon, Misses Lucy and Mary Scanlon, Miss Burns and Mr. Thos. McMillian, of Chapman, were taken through the College buildings on Tuesday by Mr. and Miss Bennett, students.

Professors Hood and Georgeson have a place on the interesting program of a wide-awake Farmers' Institute at Oak Grange Hall, near Topeka, this week. Professors Lantz and Mason will take part in an Institute at Ottawa, February 15th and 16th, and on the 22nd and 23rd Professors Popenoe and Walters share in an Institute at Tribune. Institutes will also be held in the near future at Junction city, Hutchinson, and Iola.

Sen. M. A. Householder and Messrs. Chas. Yoe and J. W. Freeborn, members of the State Board of Charities, spent most of Thursday at the College on their return from a visit to the Girls' Industrial School at Beloit. The gentlemen made a careful study of equipment and methods in the industrial departments, in the hope of some day making additions to the industrial features of the various State institutions they represent.

The first division of the Fourth-year Class occupied the chapel rostrum Friday afternoon. After a selection by the orchestra, the following orations were given by the several members of the division: "The Abuses of Freedom," F. W. Ames; "The Benefits of Diversities," Clara Castle; "Education of Farmers," G. L. Christensen; "The Progress of Woman," Lorena Clemens; "The Magazine as an Educator," J. C. Christensen; "Advancement of Cooking," Martha Cottrell; "Bellevue Hospital," E. A. Donaven; "Noted Women of the Bible," Sarah Cottrell; "Staff," J. E. Taylor. Mabel Farwell's piano solo, "The Song of the Alps," was highly appreciated.

GRADUATES AND FORMER STUDENTS.

J. A. Rokes, '93, attended the Hamilton exhibition.

J. H. Criswell, '89, was in chapel Monday morning.

A. M. Jones, student in 1884-5, teacher of Chemistry in Wesleyan Normal University, Salina, in a letter makes incidental reference to a son recently born to himself and wife.

Fairy Strong, Second-year in 1891-92, visited classes on Friday morning.

G. W. Wildin, '92, came up from Topeka to attend the Hamilton exhibition.

Truman Allen, Third-year in 1893, came up from Topeka and spent Sunday with College friends.

T. E. Lyon, '93, who is now Superintendent of the Garrison schools, came down to attend the Hamilton Annual.

Ed Thackrey, Third-year in 1888-89, who is visiting home folks after a long absence in Nebraska, called at the College, Wednesday.

Miss Mary Lou Brooke, of Missouri, in company with Bessie Morrison, Third-year in 1892-93, looked over the College Thursday.

Geo. W. Waters, '86, was married at Junction City, February 8th, to Miss Sadie Shane. Mr. Waters is a teacher in the Junction City schools.

The Class of '92 are in receipt of their Class Letters, neatly printed and bound in pamphlet form, under direction of Miss Effie Gilstrap, of Chandler, Oklahoma.

C. H. Thompson, '93, writes of satisfaction in his work of teaching in Washington University, Shaw School of Botany, St. Louis, and that he is personally making a collection of parasitic fungi of the locality in expectation of one day publishing it.

The Hamilton Annual.

Saturday evening, February 3rd, the chapel was filled to overflowing to witness the seventh annual exhibition of the Hamilton Literary Society. The program opened with an overture by the Hamilton Orchestra, and prayer by President Fairchild.

The address of the evening, "An Element of Progress," by J. A. Scheel, brought out the importance of discussion applied to every walk of life. "This force in the underflow of human affairs sweeps away all the false barriers of custom, and all hindrance to thought. No great advance has ever yet been made in the world, a great reform is yet to be accomplished, without a preceding period of discussion. The dawn of the Reformation found the inhabitants of Europe protesting against the established church. The crystallized forms of creeds and customs were broken down through the teachings of such men as Luther and Calvin. Paine, Franklin, Madison, and Hamilton educated and nerved the American patriot to gain for us the inheritance we now possess. This is an age of discussion. Never before were the very underlying principles of government and society more thoroughly discussed. Men are better prepared for discussion today, for the lesson of toleration has been learned, and the esteem for precedent is gradually growing less, but our prejudices still play too important a part in all affairs. We must educate for discussion as well as by discussion. The work begun by others devolves upon us, and there are yet many walls of fallacious custom whose overthrow by discussion will open a way for new and greater progress." The oration, which showed deep thought, was a credit both to the orator and to the Society.

E. L. Frowe's bass solo was rendered in a pleasing manner, and called forth hearty applause.

The debate, "Is Our Government Endangered by the Money Power?" was ably presented by C. A. Johnson and C. D. Adams. The affirmative argued that, "In the face of the fact that men are unequal in ability, the government has aided the most able in their selfish ambitions to accumulate wealth. A large per cent of families now live in tenements on the poorest streets; consequently large numbers of votes are easily influenced with a little money. Senators and Representatives are practically but indirectly bribed, as shown by continued swarming of representatives of rings, trusts, and combines about the capitol at every session of Congress, which is now swayed by them. The business of the country is done now by large firms blotting out small enterprises and dividing people into two classes. Unless change is made, it will be fatal to our freedom, and result in the government of the country by the purse." Mr. Adams, on the negative said that, "In barbaric times the controlling influence was superstition, but military dominion took its place. This power is declining, and my opponent says that the money power is to take its place. We admit that this power has many evil influences, but they are being rapidly overcome by ballot reform, public sentiment, and desire for knowledge, instead of wealth. Our rapid progress as a nation in a great part is due to enterprises and industries controlled by capitalists and corporations. Competition will ever hold these in check. Wealthy men are now building universities and charitable institutions for the betterment of mankind. As intelligence and christianity increase, the conflict will die away. Labor and capital will join hands, and all shall enjoy prerogatives of liberty, virtue, and truth."

The audience was then amused and entertained by a chorus, "Our Domestic Brother." Its appreciation was shown by a hearty encore.

The Society paper, the Recorder, was presented by R. J. Barnett, with the motto, "If you can't be a good Hamilton, it were better for you had you been an Ionian." The following titles give some idea of its contents: Prejudice; What My Glasses Showed Me; Exchange from Alpha Beta Gleaner; Professional Sayings; A Cue for the Inventive Mind, or the Lightning Educator; Excursion Rates; Development; In Remembrance of P. M.; Appropriate Epitaphs for some of our Great Hamiltons. It was a spicy edition, carefully written, clearly read, and was pronounced by many the best paper ever read from the chapel rostrum.

E. L. Frowe's oration was an eloquent protrayal of "The Anglo-Saxons, and Their Mission." A close resemblance exists between these, our progenitors, and ourselves. They still have the same general characteristics after passing through "a thousand years of civilization, transportation to a new continent, revolutions and changes in governmental form." The Anglo-Saxon is in possession of the greater portion of the productive area than any other nationality. From the British Isles he is scattered and established on the corners of the earth. The United States has improved upon England's faculty of assimilation; for that country could never "Anglo-Saxonize" Ireland, but America has already "Anglo-Saxonized California, Louisiana, and Texas, and will some day produce the same change in Mexico. The mission of the Anglo-Saxons is to lead the nations of the earth to a higher civilization. We are producing such results in science and art, and by our manufacturing industries, and the magnitude of our commerce, that the surrounding nations have come to look to us as their model."

The guitar duet, "March Du Magnifique," by C. W. Lyman and B. Hackett, was well received, as was shown by an encore, to which the boys responded.

In the historical play, "William Tell," each part was well acted, while the new and appropriate costumes were especially admired.

The baritone solo, "Mineola Polka," by H. G. Johnston, was a pleasing variation, and was well rendered.

W. O. Staver's oration, "Un-American Tendencies," showed careful preparation, and was delivered in his usual earnest and forcible manner, pointing out some of the dangers which threaten our Republic. "It was that inspiration for a free and equal government held by all good citizens, which caused our fore-fathers to throw off the yoke of bondage in the days of the Revolution, and which later freed the slaves and united north and south into a common brotherhood of American citizenship. Meanwhile, labor troubles arose, legislatures were bribed, and the press upheld the corruption of political parties. Trusted with self-government, we have kept the illiterate in subjection instead of educating them. The accumulation of wealth in the hands of corporations and monopolies, the advance of political rings and machines toward the control of national government, the existence of such rings as Tammany and McLaughlin, show our politics to be upon the decline. But the people are awakening, and by means of education and co-operation will purify the ballot, check these un-American tendencies, and we will again have a representative democracy, the approximate government of the people."

This oration closed the program, after which the President C. R. Hutchings, in a few well-chosen words, dismissed the audience, who could not but feel that the Annual was a success in every particular, and one of which the Hamiltons might well be proud.

S. K.

COLLEGE ORGANIZATIONS.

Student Editors.—Rena Helder, Stella Kimball, and G. L. Christensen.

Webster Society.—President, J. M. Williams; Vice-President, J. V. Patten; Recording Secretary, B. F. S. Royer; Corresponding Secretary, F. E. Uhl; Treasurer, A. C. Cutler; Critic, E. H. Freeman; Marshal, A. G. Bittman; Board of Directors, C. R. Pearson, E. H. Webster, E. L. Brockway, G. A. Dean, and R. P. Newman. Meets Saturday evenings at 7:30 o'clock. Admits to membership gentlemen only.

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Ionian Society.—President, Phœbe Turner; Vice-President, Hortensia Harman; Recording Secretary, Minnie L. Copeland; Corresponding Secretary, Maggie A. Correll; Treasurer, Lynn Hartley; Critic, Mary Lyman; Marshal, Rena Helder; Board of Directors, Ethel Patten, Maud E. Kennett, Blanche E. Hayes. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

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February 3rd.

With the room well filled and a number of visitors present, the Alpha Beta Society, was called to order by Pres. Smith. Sadie Moore led in devotion. The question for debate was, "Resolved, that Agriculture has done more to promote civilization than Commerce. The affirmative was argued by Con. Buck and M. E. Sandstrom; the negative, by Elva Palmer and H. R. Miller. The Judges decided unanimously in favor of the negative. The Society was favored with a recitation from Sadie Moore, rendered in her usual interesting delivery. The Gleaner, from the second division, was presented by Stella Kimball. "Cheerfulness and Despondency," "Kansas Day," and our "Alma Mater," were some of the leading articles. The paper was lively and well read. After recess, Lettie Rigney sang a solo. After informal speeches by A. C. Peck, on "Party Feeling," M. Spalding, on "Soy Beans," and A. H Morgan, on "Advancement of Woman," a general discussion followed. The Society was pleased to be favored with music from two prominent Ionians, Rena Helder rendering a solo, accompanied by Hilda Liecester on the organ.

G. W. F.

February 2nd.

President Turner called the Ionian Society to order, and Belle Frisbie led in prayer. After the usual singing and roll call, Lula Leonard was received as a member. Rena Helder opened the program with

an instrumental solo. Ethel Patten presented a very good and interesting edition of the Oracle, having for a motto, "Wisely and slowly; they stumble that run fast." Emelie Pfuetze read an essay entitled "A Legend of St. Nicholas." The Society was entertained with a piano solo, by Mabel Farwell. Following this, the subject, "Resolved, that football games are more educative than brutalizing," was thoroughly debated on the affirmative by Laura McKeen and Flora Day, and on the negative by Hortensia Harmon and Maggie Carleton. The affirmative in quoting from the Presidents of Harvard, Yale, Cornell, and other eastern colleges, stated that the football players grades in those schools were, on an average, higher than the remainder of their class; which was attributed to the physical culture the game affords. They further stated that those who had studied the propensity of the game had decided that much of the apparent brutality, as well as unjust playing, might be avoided if the game was under the control of the Faculty, and on college grounds. The first speaker on the negative gave a vivid description of the plan and plot of the game, and the method of procedure; which showed the tendency to win or wound. She stated that her research had showed it to always be a sacrifice of the intellect to the physical. The second speaker compared it to war, as the first questions asked after a close game are, "Who won the victory?" then "What was the number killed and wounded?" and said that in one year there were nine deaths in America and twenty-six in Europe caused by football. The judges, Misses Hayes, Swingle, and Frisbie, decided unanimously in favor of the negative. Flora Waugh then recited "Pyramus and Thysbe." Eme ie Pfeutze closed the program with a well rendered vocal solo, with Rena Helder at the piano. After the tra saction of the business, the Society adjourned. M. A. C.

Building Up the Farm Home.

There is a charm about the story of old Obed Edom, the honest, brave old farmer who took the ark into his house and kept it there until it could be established in its national position. The home of this steady Judean must have been a model worthy of imitation. It is certain that according to the law of his country it was his own house, held by a good title and unencumbered by a mortgage. Doubtless the earliest duty that a man owes to himself, his family, society, and State is to provide a home where he can enjoy the sweets of family and social life, and which he can hold as a free citizen of his commonwealth. This is sometimes difficult to do, and oftentimes unforeseen difficulties prevent the attainment of this great object. But happy is the man who can call his home his own, however humble it may be.

The farm home is capable of attractions that cannot be given to the houses in cities by the expenditure of thousands of dollars. The site on the hill, the natural growth in the yard, the broad view unobstructed by hard rows of brick and mortar, the sweet, fresh air, and the pure water from the well or spring, are all advantages which nature provides for the family in the country home. What a splendid place in which to rear the tender offspring of the family into well-rounded maturity, free from the excitements that overstrain the forming nerves. Perhaps this has something to do with the fact that so many successful men in cities proudly point to the fact that they spent their early years as toilers on the farm.

By all means make the country home the most attractive spot on earth. True enough that the farmer's toil is not often rewarded with riches, and he has many obstacles to overcome in order to succeed in making a living. But in admitting all that, he has a calling which can be adorned with the graces of home and social life. To do this, he must be still a practical and not a sentimental farmer. If flowers bloom about his house, the corn will still wave its tall tassels and hang out its weighty ears in his fields. Music by his daughters in the house will not supercede the melody of the reaper in his field. The farmer is a man whose home can show comfort, beauty, and utility all combined.

Much has been wisely written about the nece sity of improving the farmer's home life, and line must be added to line, and precept to precept, until living in the country comes at least a parity with ife in town. To this end the grouping of good homes must receive more attention; the roads that lead to market, to church, and to the neighbor must, by common consent and united endeavor, be improved. The school house ought to be a better structure, and the churches must be near.

"Tell me about home life," said a philosopher, "and I will foretell the destiny of your country." As the family, so the nation of families, and as the farm home appears, so may we judge of the real prosperity of the land. Sad indeed the situation of a land where all its glory is just gilding that appears in the vain show of municipal wealth, where the homes of the people express by a mournful dilapidation either that poverty prevails or the advantages of the country home life are unappreciated.—*General Clement A. Evans, in Southern Cultivator.*

The present condition of the trotting horse market is such that a trotter that can go out and demonstrate that he is a trotter is more valuable than if he has a record, for his earning capacity is so much greater, while the value of a trotter that cannot trot is very chimerical.—*Mirror and Farmer.*

The blanketing of a horse may be seem like a small matter, but attention to it at the proper time would have saved the life of many a valuable animal, and would have prevented a great deal of suffering and loss.—*American Farmer.*

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The State Oratorical Contest will be held on the 23rd of February at Topeka.

The graduates of the Holton High School number 116. Of these, eighty-seven are girls and twenty-nine are boys.

Mr. S. M. Gardenhive has written forty serial stories and several short stories under the nom de plume of Fortunes L. Storr.

Chancellor Snow of the University began a series of lectures on evolution of the human species at the High School Auditorium at Kansas City Monday evening. The lectures promise to be interesting.

Mr. J. A. Sweet, Assistant Superintendent at Haskell Institute, the United States Indian Industrial School located at Lawrence, has been promoted to Superintendent. This ends a long and weary contest of a score of hungry candidates in a satisfactory way.

A telegram was received at Fort Leavenworth from the War Department asking if any of the lieutenants stationed there would like an appointment as Professor of Military Science and Tactics at Baker University. When the lieutenants found that dancing was barred at Baker, they wired back unconditional regrets.—*Kansas City Star.*

The Methodists in Oklahoma are taking a sensible stand in the matter of higher education. Instead of erecting three or four colleges and "universities" in the new territory, the Methodists are going to build what they call an "Epworth hall" at the territorial university, where the Methodist young people may board and room and be under the descipline and religious training of a dean, and at the same time enjoy the advantages of a good university. In Kansas all the religious denominations made the serious mistake of building too many colleges. In Wichita there are a half dozen struggling along and one having the largest building in the west—has been utterly abandoned. All over Kansas there are half supported colleges and so-called denominational "universities" that are very little better than high schools. The church members are taxed beyond reason to keep these "universities" and barely eking out a miserable existence. There are three excellent institutions supported by the State of Kansas. These institutions have more money than all the denominational schools in the State; consequently they have the best instructors and they buy the best apparatus and have the best laboratories and libraries in the State. How much better it would be if the half starved "universities" were all closed and the various denominations had dormitories and chapels at the three State schools, where the Methodists could go to Methodist prayer meeting, the Baptist could go to Baptist class meeting, the Presbyterian could receive Presbyterian doctrine and the children of parents subscribing to other creeds could be trained daily in the way they should go. It is fortunate for the Methodists that they are starting out on the right foot in the new territory. Other denominations will do well to follow them.—*Kansas City Star.*

State Superintendent Gaines, in a letter to Supt. Chas. P. Dawson, Hutchinson, Kansas, makes the following remarks on the county high school question: "In reply to yours of the 16th ult. asking my opinion as to the feasibility of establishing a county high school in your county, will say that I am a very warm supporter of the county high school system; however will not allow myself to overdraw the benefits to be derived from such an institution. I was connected with the first county high school established in the State for two years as an instructor, and had an opportunity to observe its workings in every detail. When the proposition carried in Dickinson county, it was thought by the opposers of the school that the institution would be a failure, and even the warmest advocates were to some extent embarassed for fear that it would not prove a success; however sufficient courage was mustered up and the building, costing about $12,000, was erected. The school opened the first year with an enrollment of nearly 100, and before the close of the year nearly 140 was reached. Since that time the enrollment has reached, I believe, more than 160 per annum. Of the number who attend the Dickinson county high school I will say that perhaps 80 per cent are young men and women who would never have attended any institution of learning other than the common district school had it not been that a free school of higher learning was established in our midst. Of this 80 per cent a large number from year to year will complete the three years' course of study, and of those who complete the course many will continue their training in some higher institution of learning in the State. I will also state that of the entire number attending the county high school of Dickinson county more than 90 per cent are boys and girls from the farm. In fact, it is a farmer's institution, but equally as useful to the city, for the county high school affords many advantages which in my estimation the city high school does not offer. The expense of maintaining such a school is not great to the county. Only one mill tax has been levied annually for the support of the Dickinson county high school. I will add further, that the county high school of Dickinson county is well patronized by the people of every portion of the county. Parents go to Chapman, where the school is located, and rent rooms for their children and provide them with the necessary furniture (often taken from home), and also provide them with the necessary food, which makes the entire cost of attending the school for a year a very small sum indeed for the benefits derived. Others obtain board at a very small sum. I sincerely believe that if the people of your county could be led to see the benefits to be derived from the establishment of a county high school, that the vote would be unanimous.

Purdue University has the sympathy of all college workers in its serious loss, described in a dispatch from La Fayette to theCoicago *Tribune*, under date of January 23rd. The Department of Mechanical Engineering has had a wonderful growth, and its exhibit at Chicago was one of the most complete and interesting in that line: "Tonight the recently dedicated Havilion Mechanical Hall of Pvrdue University was destroyed by fire, which started from a natural gas explosion. The hall was completed and dedicated last Friday, President Smart that day turning the building over to Gov. Matthews as a part of the State Agricultural College. The college is a mile from the city, and has no fire-fighting apparatus whatever. The building had a magnificent mechanical equipment, valued at $75,000. Much of this is destroyed or badly damaged. The building with its appurtenances cost nearly $100,000. The structure was 386 feet long and 284 feet wide. President Smart was unable tonight to state the amount of insurance, but it will not exceed $35,000. The building is an almost complete loss."

MANHATTAN ADVERTISEMENTS.

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Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

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The Experiment Station should be addressed through the Secretary.

READING ENGLISH HISTORY.

BY PROF. FRANCIS H. WHITE.

THE time that many people spend over unimportant matters in their newspapers—the murders, scandals, fires, gossip, etc.,—would be sufficient, in a few years, to acquaint them with all the important events of the world's history. The present absorbs our attention. Why should an event, merely because it happens to-day, be more interesting than one occurring a hundred years ago? The former may have no direct bearing on our lives; the latter may be one of the links in the great chain of causes that makes us what we are.

The failure to appreciate the past surely cannot be due to a lack of imagination, that indispensable to historical reading. It is no harder to imagine a scene of a thousand years ago than one that occurred a thousand miles away, if both deal with persons and places unfamiliar. The distant in space is as hard to "sense" as the distant in time. The newspapers make constant appeals to the imagination, and apparently the readers easily respond.

There are those, however, who fully appreciate the advantages of an acquaintance with the past: they realize the benefit to their judgment from considering complex phenomena to their character by coming in contact with great men and great deeds; and they know also that in the hands of a skillful historian the actors may be made to live again. The questions with such are where to begin and what to read.

Assuming that a general view of the world's history has been obtained by the use of such a book as Freeman's General Sketch, Swinton's Outlines, or Sheldon's Studies, it would be a good plan to secure next a more thorough acquaintance with the history of some one country. An American familiar with our own national life should select England.

Let us free our minds from prejudice. How unfortunate it is that when at the most impressionable age we are taught by text-books and teachers to hate the mother country! Even when the teacher makes an effort to show how little responsible were the great mass of the English people for the tyrannical acts of their government, it will be found practically impossible to follow the fortunes of our army during the Revolution without laying the foundation for deep-seated prejudice.

This hatred of England aroused in youth is increased in mature life. The partisan newspapers continue to fan it by constantly claiming that the British government or British capitalists are striving to overreach us here or there. No doubt at times there is special reason for watchfulness. The trouble is the distrust is so deeply rooted that everything, even the most innocent acts, are viewed with suspicion, and we go around with a chip on our shoulder daring England to knock it off. In addition to these causes for prejudice, there is the further one that because certain silly society people ape English manners and customs, it has almost become the test of a true American to ridicule all who profess admiration for England.

But where can we go to find the history of a nation so rich in instruction, interest, and heroic figures? Her political, religious, industrial, intellectual developments have been slow, but remarkably uniform and continuous. Nowhere can the democratic movement be so clearly traced, nowhere can the progress of toleration in religion be so plainly shown. Shakspeare, Tennyson, Macaulay, have found in it events and scenes worthy of their highest literary skill. For nearly two thousand years we can watch the development of English civilization.

When we remember that our law, religion, government, literature, language, have their roots down deep in British soil; when we realize the probability that the English-speaking people are one day to dominate the world, there are reasons enough for a thorough knowledge of that remarkable country. In order to map out the most helpful course of reading in English history, one should be acquainted with the tastes, ability, and intentions of the reader, but perhaps the following suggestions may be of some use:

Green's "Larger History of the English People" should be the main reliance. Its literary style, accurate statements, wise generalization, and the fact that it deals so fully with the life of the people rather than with camps and courts, places it far ahead of any other English history.

If nothing else was read a comprehensive view would be obtained, but it is better to study some portion more thoroughly, and now and then treat ourselves to a literary excursion. For example, while traversing the early portion, read Tennyson's "Idylls of the King" and Chaillu's "Viking Age." After the Norman Conquest, Scott's "Ivanhoe" and Kingsley's "Hereward" will be found interesting. Shakspeare's "Henry IV." and "Richard III." will bring to life the important personages of those times and make the reader feel as if he had met and talked with them. An excellent idea of the industrial life of the people during the middle ages and somewhat later may be obtained from Ashley's "Economic History of the Middle Ages" and "Roger's "Work and Wages." Macaulay's History should be read when the reign of James II. is reached, and McCarthy's "History of Our Own Times" will give, in an attractive way, the events of this century.

SOME RECENT BOTANICAL LITERATURE.

BY PROF. A. S. HITCHCOCK.

"ASSIMILATION of Nitrogen by Plants." We have before us another contribution upon the vexed question as to whether plants are able to use the free nitrogen of the atmosphere. Mr. Latsy, in bulletin No. 18 of the office of Experiment Stations, gives the details of some careful experiments with white and black mustard. A series of each species was cultivated in nitrogen-free sand, part of which were supplied with potassium nitrate and the other part with potassium chloride, each having all the other ingredients necessary for proper development. The first lot developed finely; the second, but little. The black mustard, however, appeared to have fixed some nitrogen, as the plants, though small, were larger than would have been expected. Water cultures gave more decisive results, the plants supplied with nitrates developing nicely, and those not thus supplied dieing soon after germination. It was suspected that the black mustard in the first series of experiments might have obtained some nitrogen by the action of micro-organisms present in the sand. So another series was tried in which the sand, the containing vessels, the seeds, the air, and the water were all sterilized. In this case the plants unprovided with nitrogen died soon after germination. The author therefore concludes that these two species are not able to live without fixed nitrogen.

"Maize: A Botanical and Economic Study." John Harshberger, of the University of Pennsylvania, has published some important investigations concerning the origin and history of this well-known plant. Space will permit but a brief review of the sixty-three pages devoted to origin.

Meteorological proofs: A comparison of yield with the latitude, altitude, and rainfall shows that corn is a highland plant, that the original home was south of the 22nd degree of north latitude, and that it is capable of withstanding rainless weather.

Botanical proofs: Its closest allies among the grasses seem to have spread from Mexico. A wild form, that is, one which reproduces itself, has been found in northern Mexico; and still more recently a new species in the same region, which very probably represents the primitive state of the plant.

Archæological proofs: Accounts are given of numerous ruins and remains of various sorts where the kernel or the cobs of maize have been found, both in North America and in Western South America. The varieties were more numerous in Mexico than elsewhere, which shows that its cultivation was older there than elsewhere. Especially in Mexico maize appears frequently in the architectural decorations. Corn was a staple food among the Tucas as well as the Aztecs, but there are various reasons for assigning a greater antiquity to the cultivation of the latter people. The summed-up evidence here shows that maize originated in Mexico.

Ethnological proofs: The author's ethnological survey of the native tribes of North and South America is summed up as follows: "That the Mayas [native Mexicans] were the superiors of any other race on the North or South American continent, and were the source of a large part of the indigenous American culture is proved: (1) by the fact that the tribes and mound-builders in the present territory of the United States were just entering on the agricultural state; (2) .....; (3) because the Mahas evidently borrowed their agriculture from the more advanced Mava tribes in the south, with whom they came in contact in their settlements and migrations; (4) because the Incas, occupying a northern location, at first near the great Panama trade route, at a later date spread their sway to the far South, carrying the germs of agriculture and the rudiments of the arts to the barbarous tribes

in the Bolivian and Chilian uplands. And this argues for a comparatively recent development of their civilization and agriculture; for in Mexico all the tribes practiced agriculture, but in South America, among the wild tribes, agriculture was yet in its incipient stage."

Philological proofs: After carefully studying the names by which maize was known in the various Indian languages, the linguistic evidence shows that it was introduced into the United States from two sources, Mexico and the West Indies; that the tribes of Northern Mexico derived it from Central Mexico; that there was an interchange of products between North and South America by the way of the Isthmus of Panama, and that the wild tribes of the Andes used Peruvian words, which, more or less corrupted, extended up through South America, the West Indies, and into Florida.

Historical proofs: A resume of the historical evidence of the extent of its cultivation. The final conclusion reached through Mr. Harshberger's scholarly investigations is that maize grew wild on the table lands of Mexico, and was first cultivated by the early Mexicans.

WIND POWER ON THE FARM.

BY JOHN E. TAYLOR, '94.

THE following facts are from actual experience, and go to show what the use of a very small portion of the power that passes over a farm almost daily, coupled with some ingenuity on the part of the farmer, will do in the way of saving labor.

A twelve-foot geared steel wind-mill furnishes power in abundance for the following work: By means of lever arms and reciprocating wires two pumps are driven, distant seventy-five and three hundred feet, respectively. The latter always gives a supply of pure water, indispensable for dairy cattle and desirable for any stock. A shaft of gas pipe carries the power for churning to a cellar sixty feet distant. A belt which can be readily thrown on runs the grindstone, a fact appreciated by the small boy when there are two or three sickles to be ground, and a convenience at any time. Inside of the mill-house enclosing the lower portion of the tower are other belts connecting with a cornsheller and a corn elevator which carries the shelled corn up out of the way. A grinder attached direct to the driving shaft is capable of grinding fourteen bushels of corn per hour, and has an automatic feed. Fine meal and graham flour can both be ground for house use, and a fresh article is insured.

It occasionally happens that a churning must be done or a tool ground when there is no wind; resort must be had to the old way, but even this need not occur often.

Not all described here would be practical on very many farms, but portions of it would be decidedly so. By the use of wind power the farmer can usually obtain a supply of pure water for his stock, save four or five cents for every bushel of ground feed used and save a large amount of labor in various ways. The possibilities are not limited to the uses mentioned above; apples can be ground into cider, the wood sawed, or feed cut for stock by a wind-mill.

It is not probable that wind power will ever entirely supercede steam power for farm use, but it is encroaching upon it rapidly. Manufacturers have made rapid strides in the production of a good mill, and the mill of today is far ahead of its predecessors in strength, durabilty, and efficiency, and we can add to this that the power itself costs absolutely nothing.

WHY FARMERS ARE NOT THEIR OWN EXPERIMENTERS.

BY J. M. WILLIAMS, '94.

IN the affairs of everyday life, we are often confronted by the query as to why the farmers are not their own experimenters. Those asking the question are of the opinion that it is not only a poor business policy to intrust experiments to men who in some instances have no direct interest in agriculture, but that the farmers themselves should do the work which the Stations are undertaking.

Now, we believe if we were to place the duties of our Station officers upon these very men who are so loud in their denunciation of the methods in vogue that the Experiment Station, which now plays so important a part in the farmer's growth, would soon be an institution of the past. Our friends seem to have the impression that because some of our experimenters have not lived upon the farm all their days they cannot carry on investigations for farmers. In all probability if they had only been accustomed to plowing, sowing, and reaping from childhood, they would not be scientific experimenters at all. It requires a greater fund of knowledge to unlock the secrets of nature than those which the average tiller of the soil possesses, and in order to acquire this store of information one must have other training than that which comes through the farm. He must not only be familiar with the processes by which plants live, grow, and develope, but he should know something of the properties and composition of soils, the action of different fertilizers upon crops, and many other practical questions.

All of this knowledge, which is so essential to the successful experimenter, many farmers do not possess. Even if they did, there is not one in a hundred who is financially able to carry on a long series of experiments, extending, perhaps, over a period of several years. An experiment cannot be carried on for a song. It requires a large outlay to even place an experimental crop in the ground, for everything must be done in the most exact manner. If it is corn with which you are working, having in view the ascertaining of the best distance to plant for ensilage, every kernel must be placed in the row just so far from every other. Or if you are wishing to know the best depth at which to plant, much time must be spent in placing the seed at the desired distance under the ground.

The harvesting of a crop would be no small item to the farmer. If, for instance, he has a plat of wheat which is ripe today, he must cut it today even though informed that he must go to town for half a dollar's worth of sugar, or that the hogs are in his neighbor's corn. He must make hay while the sun shines, or else all his labor will be for his pains. If he has become an experimenter, he must not forget that his duty lies centered in his experiments.

So we see that the farmer, on account of his financial standing and many duties, cannot well be an extensive experimenter. It is necessary, then, that we have Stations where nothing but experiments are the orders of the day. This fact was recognized a number of years ago, and today experiment stations are to be found in nearly every State and Territory. With their influence being felt throughout the length and breadth of the land, they promise to become, as the years roll by, more and more essential to the farmer's happiness and prosperity.

A Book-keeper's Criticism of Farmers.

During my vacation in the summer of '93 from the accountant's department of a large manufacturing house, I had occasion to spend part of that rest among my old friends, the farmers. Upon questioning my old friends, they appeared to be unsatisfied, as the farms which supported their fathers were now almost useless, many encumbered with mortgages and other obligations. They had been forced to sell lot after lot, in order to make both ends meet, until the once pride of the town had dwindled down to a few acres or to the solitary house lot. Thus they were almost discouraged at the outlook. Upon questioning one as to what crops raised, he replied: "Way the usual ones, such as my father raised." "Can not the West furnish your grain cheaper than you can raise it?" Well he did not know, for he could not tell what it cost him to raise his crops. This reminded me of the vast difference between this man and the head of the firm where I was employed. The manufacturer must know to the fraction of a cent the exact cost of each commodity, so that he can tell which line of manufacture pays the most profit, and concentrate his energies in that line.

Iasked this farmer if his stock paid him well. He did not know, for he had not kept an account of the expenses or of the products. In fact I found that he kept no accounts whatever.

I visited several of the farmers, and the same answer was given by all "no accounts whatever." Many thought it would be an excellent thing to keep a set of accounts of their transactions, but they had no plan to help them, and some did not know how to commence, etc.

Is it any wonder there are so many abandoned farms in New England? Is it any wonder that the young man leaves the farm? Ask a business man if he could do without a debit and credit account of his transactions.—*Our Grange Homes.*

A Good Sign.

An encouraging sign of the times is the manner in which farmers are attending Institutes and Grange meetings. From every side we receive reports which indicate that the attendance at these meetings this winter is larger than ever before and that unusual interest is manifested. Since the beginning of farmers' institutes in the United States, there has been a marked incaease in the quality of dairy products, and the producers are getting correspondingly better prices for them. Poultry, sheep, and pigs too, are receiving no little share of institute attention, and bees are so much talked about that boys and girls now growing up will know just how to make money out of them. Small fruits, too, are being discussed everywhere. This is as it should be. We wish the Institutes and Grange meetings God-speed.—*The Clover Leaf.*

FARM NOTES FROM VARIOUS SOURCES.

Our farmers are thinking to good purpose. Correct thinking always precedes correct doing. Success in no line comes by accident.—*Live Stock Indicator.*

Many farmers' horses stumble because they wear such heavy shoes and are driven so slowly that they partially fall asleep. When you have a light load or a buggy, keep the horses going at six or seven miles an hour, or at a pace at which they wont fall asleep, and hold up their heads so they won't go down.—*Farm and Home.*

We would that every farm house in the country had its ice house and its crop of ice for summer use. The advantages attending the use of ice are so palpable that each year a greater and ever-increasing number of people put up a crop of it. With the continual spread of dairying an ice supply for every dairy farmer becomes a necessity, and in the near future those who will be without it will be an exception, and not the rule, as at present.—*Canadian Farm Journal.*

A thing to be remembered just now is to procure the supply of seeds for the spring sowings, both for the garden and the fields. There may be delay in getting the needed supply at the time when one is waiting for them in the busy season, and then the seeds must be sown without any examination as to their ability to germinate. Many a crop has been lost wholly or in part by defering this important part of the business of the farm and the want of time to test the seed.—*Colman's Rural World.*

The bright boy in the country who does his level best in the country school, learning in the meantime from observation all that can be known on the farm and in the neighborhood, and then finishes his studies at a well equipped agricultural college, is better fitted for the race of life than if he had graduated at the high school in the city and finished his education at the best college in the land. We think it is but just to say this much to boys and to their parents who chafe under the isolation of farm life. We know exactly how a boy feels, for we have been through all this country school experience, and we look back to our training on the farm and in the country school as among the most valuable experience in our life.—*Live Stock Indicator.*

Relation of the Farmer to the Country.

Using the word in its broadest sense, the agriculturist has the utmost interest in the proper solution of all these questions which, in the language of today, we call economic. It is true that all producers obtain a little less than should be the price for their products. This is truer of the farmer, however, than of any other producer, for various reasons. As a rule, this class is not capable of compact organization, it does not accumulate capital, its necessities require immediate sale, and it therefore follows that whenever there is a contest it is apt to get the worst of it. So, too, its capital is rarely looked upon as capital, upon which dividends are to be paid, and its profits are not calculated upon the same general and careful basis. For instance, railroad companies regulate their rates of charges in part by the mathematical calculation of dividends which are required by the bondholders and stockholders, and seem in contest with farmers who have the best of the argument when they show that the rates do not produce anything more than a reasonable dividend; so that, as a class, the farmers do not receive the immediate benefits from these added means of production, and in times of distress they more quickly feel the disastrous effects. I may be permitted to suggest that out of this grows the too easy disposition of the farmer to accept crude thoughts and to exhibit vacillating purposes concerning public affairs. He sees and feels the apparent injustice, but does not appreciate the real cause for it, and therefore in our politics, using the word in the broad sense, and not in the narrow party sense, he as a class does not make himself felt as he could, because he does not bring to discussion of those questions the patient and intelligent consideration which other persons engaged in the great vocations of life do. The banker, the manufacturer, or a president of a railroad company makes himself thoroughly familiar with not only the routine of his business, but with practical effect of progress upon his particular business or interest. This, however, is undergoing a marked change. The occupation of the farmer is becoming every day more a profession and a business which requires the same careful methods and methodical supervision which are required in other industries, and he who succeeds in one of the branches of agriculture has full play for the same faculties which are required by a successful banker, manufacturer, or president of a railroad company."—*Wm. C. Breckenridge, in Prairie Farmer.*

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Secretary Graham was kept from College duties on Monday by the sickness of Mrs. Graham.

Mesdames Bowen, Olin, Mason, Lyman, and McKeen attended chapel exercises Friday afternoon.

Mr. Harness Stingley and daughters Kate and Mamie attended chapel exercises Friday afternoon.

Mrs. Ellis, of Havensville, looked over the College, Friday, in company of her daughter Lucy, Third-year.

Prof. Nichols has placed a storage battery in the First National Bank that light may be had at any time.

Regent Wheeler, in his monthly visit to the College this week, made it convenient to attend some of the lectures in Short Course.

Prof. Mayo's recent article on "The Corn-stalk Disease" finds a place in the quarterly report of the State Board of Agriculture.

Mr. and Mrs. F. D. Coburn greeted friends at the College Friday. They were accompanied by their son Clay, a member of the class of '91.

F. M. Philbrook, of Chepstow, is visiting with his son and daughter, Rufus and Eva, Second-years, and attending the lectures in the Short Course.

Geo. Boardman, Third-year, has been enjoying a visit from his father, H. R. Boardman of Centralia, who has been attending lectures in the Short Course.

Judge Sutton addressed the students in Chapel, Friday morning, in earnest words of encouragement, and later visited several classes in company of Mr. Coburn and Mr. Snyder.

President W. S. Hanna, of the State Alliance, in company of Mr. Wardle, of the National Alliance, were interested visitors in the various departments on Friday last.

The Library has received two pamphlets, excerpts from the *Physical Review*—one entitled "Note on Some Surface Tension Experiments," and the other "A Study of the Transmission Spectrum of Certain Substances in the Infra-Red," both by E. F. Nichols, '88, Professor of Physics in Colgate University, Hamilton, N. Y.

Capt. Bolton, wishing to join his regiment after three and a half years service at this College as Professor of Military Science and Tactics, has asked to be relieved. Official notice from Washington says that his request has been complied with, and that Capt. H. G. Cavenaugh of the Thirteenth Infantry, now stationed at Fort Supply, O. T., has been detailed to succeed him. The change will probably be made in a week or ten days. Capt. Bolton will go to Fort Bliss near El Paso.

Miss Rupp occupied the public hour Friday afternoon with her lecture, "The Power of Influence." The lecture abounded in beautiful illustration, and brought out the thought that nothing in nature is ever lost. This is illustrated in the simultaneous action of the law of gravitation, the extent of which is beyond our comprehension. It operates to make the universe one grand whole. So with personal influence. It goes with us always—it is born with us, it clings to us, it grows with us. We cannot live to ourselves. Others watch us and are influenced by what we do. Example is the practical school of mankind. Mothers by their every act cast shadows upon posterity. The influence of mother ranks first in all that is beautiful or of value in character, and that of home is second only to that of mother. How important, then, that home be made pleasant! But the power of influence extends farther. Every soul is influenced by glimpses of loveliness, nobleness, or holiness in others. Even death does not end it. Death transfigures, but leaves us an abiding vision of purity and beauty. Evil deeds, also, cast shadows, and bad men, too, live after death. Their influence stays behind to poison the lives of others for generations. We should, therefore, keep strict watch over our words and deeds, remembering that our influence will continue to tell in others. The influence of thought is eternal.

The Short Course.

The Short Course in Agriculture came to an end today noon. The attendance upon the lectures has ranged from twenty to perhaps fifty, and was, on the whole, satisfactory. As the course becomes better advertised, the attendance will no doubt be increased. That the lectures have been both interesting and instructive, all agree. Those present during all or part of the course were F. M. Philbrook, Chepstow; S. Weichselbaum, Ogden; R. A. Stewart, A. A. Cottrell, Mrs. Cottrell, Wabaunsee; Robt. Henderson, J. M. Wandler, Robt. L. Kepperling, Junction City; Alan Laing, Concordia; M. T. Kelsey, Topeka; Chas. Knabb, Robinson; Joshua Wheeler, Nortonville; R. H. Hawkins, Marysville; Ed. Secrest, W. Fryhofer, Randolph; T. Havens, Dwight; E. E. Enlow, Pavilion; H. R. Boardman, David Van Patten, Centralia; John and Mrs. Warner, Solomon and Mrs. Whitney, I. T. and Mrs. Goodnow, J. M. and Mrs. Kimball, G. W. Romick, Jonathan Davies, H. C. Layton, Geo. H. Chandler, Frank Harling, Thos. Butterworth, T. C. Wells, J. H. Criswell, A. H. Stump, B. R. Elliott, Isaac S. Smith, W. Marlatt, W. M. Aye, W. J. Griffing, Prof. Hougham, J. B. Quimby, S. D. Moses, Wm. Knipe, R. M. Kimball, J. G. McKeen, J. S. Norton, H. Hougham, J. Burtis, and J. G. Matter, Manhattan. Many others dropped in for an occasional lecture.

Lecturers from abroad were Mr. J. E. Nissley, of Abilene, who treated "The Dairy Interest;" Mr. J. C. Snyder, of Constant, "Poultry as a Farm Industry;" Mr. E. B. Cowgill, of the *Kansas Farmer*, Topeka, "The Irrigation Question;" Mr. F. H. Avery, of Wakefield, "Horse-breeding as a Component of General Farming;" Judge W. B. Sutton, of Russell, "Swine Husbandry;" Hon. F. D. Coburn, Secretary State Board of Agriculture, "Dehorning vs. Horning."

GRADUATES AND FORMER STUDENTS.

E. M. Paddleford, '89, is spending a few days at the College.

Rose Hardy, First-year, is kept from classes by sickness.

Clay Coburn, '91, greeted friends at the College on Friday.

R. J. Brock, '91, spent Friday afternoon at College.

Lillie Eakin, First-year, drops out of classes on account of ill health.

F. H. Avery, '87, spent several days at College this week, taking part in the Short Course.

John A. Smallwood, Second-year in 1890-91, called at the College Friday afternoon.

A. H. Hepler, student in '92, was among the visitors at the College, Friday.

Bessie Morrison, Second-year in 1891-2, and her friend Miss Lou Brooke, visited College Friday.

V. O. Armour, Second-year in 1889-90, writes from Tolt, Washington, of successful work in teaching.

News from Lake Worth, Florida, a little late, reports the birth of a daughter in December last to W. H. Sanders, '90, and Hattie L. Gale-Sanders, '89.

G. K. Thompson, '93, called at the College on Monday. The statement in the INDUSTRIALIST of two week sago, that he was reading law in Topeka, was incorrect.

The *Nationalist* says of two graduates who took part in the meeting of the Riley County Educational Association in Manhattan, last Saturday: "G. W. Smith ['93] presented the first paper on 'Training and Memory.' After defining it to be the ability to recall past events or ideas, he proceeded to elaborate on the different methods of strengthening this faculty which is so often lamented in some human subjects, as a minus quantity. He advocated not burdening the child's mind with dates, but to teach the thought of the subject matter and not the words—to employ different methods with different individuals, and to train the mind, not stuff it. 'Literature in District Schools' was successfully handled by Miss Delpha Hoop ['91]. She showed that the natures of boys and girls are as different as the clothes they wore, and their moral natures are even more diversified. The good and the bad in each were at war with each other, and as a remedy to neutralize this evil she advocated good literary training—inculcation of the best literature by the best authors, and that it was the teacher's duty to aid in the selection of such and assist in their comprehension of the same."

General Duties and Privileges.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturday, and no student may be absent without excuse. Unexcused absences are taken into account in calculating grades. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance and scholarship shows to each student his standing in the College.

Chapel exercises occupy 15 minutes before the meeting of classes each morning, and unnecessary absence from them is noted. On Sunday no services are held in the chapel, but students are urgently advised to attend the different churches of the city.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the Third- and Fourth-year Classes. Once a week all the classes meet, in their class rooms, for exercises in elocution and correct expression.

There are four prosperous literary societies which meet weekly in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the second and fourth Friday evenings of each month.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College, and a union meeting on the first Friday evening of each month.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greetings find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

COLLEGE ORGANIZATIONS.

Student Editors.—Rena Helder, Stella Kimball, and G. L. Christensen.

Webster Society.—President, J. M. Williams; Vice-President, J. V. Patten; Recording Secretary, B. F. S. Royer; Corresponding Secretary, F. E. Uhl; Treasurer, A. C. Cutler; Critic, E. H. Freeman; Marshal, A. G. Bittman; Board of Directors, C. R. Pearson, E. H. Webster, E. L. Brockway, G. A. Dean, and R. P. Newman. Meets Saturday evenings at 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta.—President, Jennie R. Smith; Vice-President, J. C. Christensen; Recording Secretary, Elva L. Palmer; Corresponding Secretary, Geo. W. Fryhofer; Treasurer, Fannie Parkinson; Critic, Lucy Waters; Marshal, W. H. Phipps; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, G. L. Christensen, Stella Kimball, C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Ionian Society.—President, Phœbe Turner; Vice-President, Hortensia Harman; Recording Secretary, Minnie L. Copeland; Corresponding Secretary, Maggie A. Correll; Treasurer, Lynn Hartley; Critic, Mary Lyman; Marshal, Rena Helder; Board of Directors, Ethel Patten, Maud E. Kennett, Blanche E. Hayes. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Hamilton Society.—President, C. R. Hutchings; Vice-President, E. L. Frowe; Recording Secretary. C. N. Brobst: Corresponding Secretary, A. P. Carnahan; Critic, V. I. Sandt; Marshal, J. A. Hoge; Board of Directors, J. A. Scheel, B. W. Conrad, F. A. Dawley, F. Smith, C. S. Evans. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

February 9th.

At 2:30 o'clock President Turner called the Ionian Society to order; and all joined in the song which opened the session. Maggie Correll led in devotion, after which the roll call showed but few members absent, notwithstanding the unpleasant weather. vocal Solo, "Thine My Dreams are, Margueretta," by Mary Lyman, opened the program, and was much appreciated as was shown by the encore, which received no response, however. An edition of the Oracle, having for its motto, "Shall it, then, be unavailing, all this toil for culture?" was presented by Mabel Cotton; and was commended for its quality in place of quantity; as the pieces were all good, thoughtful, and sensible productions, yet spicy and interesting. A recitation, "Footsteps on the Threshold," was well rendered by Lulu Dill; after which Dora Thompson entertained the society with a guitar solo, and responded to an encore. Ada Rice then read a very inter esting and instructive essay in the form of a study on the life of Miriam Evans (George Elliot), giving many interesting details of her girlhood. Mary Lyman asked the privilege of singing her parody, which proved to be a very modern "After the Ball," relating in an amusing way a story of "After the Hamp. Annual." In closing the program, a little visitor, Phœbe Hayes, entertained the Society imensely with a remarkably well-learned piano solo, which was heartily encored; she responded with another very pretty piece; after which the usual Society business was transacted, and passing over roll-call for quotations, on account of extra business, the Society adjourned.

M. A. C.

February 10th.

According to established precedent, the Hamilton Society opened with prayer by R. K. Farrar. J. V. Goodsheller received his last degree of membership, and is now entered upon the roll as an active member of the Hamilton Society. Ike Jones favored the Society with a declamation entitled "The Mortgage." Although Ike had never delivered a declamation in Society before, he got through with it remarkably well. "The Railroad Question" was the subject of an interesting esssy by F. V. Dial. The latest invention, namely the combined reaper and thresher, was discussed in an amusing as well as an interesting manner by J. J. Johnson. A. F. Manglesdorf read a very appropriate article, "The Original William Tell," which was well received by the Society. The question, "Is unusual increase of unemployed men of the present time due to faulty legislation?" was argued affirmatively by V. Emrick and E. L. Smith; negatively by B. M. Conrad and G. Whitson. The Debate was short, but argued right to the point, the debaters showing their ability to express their ideas in a few words. The affirmative argued that the unusual increase of unemployed men was due largely to the government refusing to buy silver, consequently the mines were closed and the miners were thrown out of employment. The manufacturers seeing this movement, knew that it would make money scarce and times hard, so they closed shops and threw thousands of more men out of work. Farmers, and in fact all other business men, foreseeing the crisis that would necessarily follow these actions, turned off their employes, excepting those necessary to run the business on a small scale. So in this way we trace all this pauperism directly back to democratic legislation which has been proved poor. The negative argued that it was evidently the fear of poor legislation, as the mines were closed before the legislature had taken any action on the silver question. Another great cause of so many men being out of employment is their incompetency to do work. A man should be so qualified that if he loses his position in the mines he can get employment in some other line, as there are more positions now in the various branches of business than there are competent men to fill them. The Society was called upon to decide the debate and decided in favor of the negative. The last but not the least thing on the program was the news by G. G. Boardman, who told us everything that happened during the last week from Tammany Hall to "Kansas Hell."

A. P. C.

February 10th.

The Websters were called to order by President Williams at the usual time. Roll-call found few absences, although the night was stormy. J. C. Wilkin led in devotion. Minutes of the previous meeting were corrected and approved. After a parliamentary discussion, the order of debate was passed for the evening and that of "declmation, composition, and reading," taken up. First was a humorous declamation "How We Hunted a Mouse," by H. J. Robison. A. F. Gildemeister did credit to himself and the Society

in a declamation entitled "The Slave in the Dismal Swamp." The "Reporter," presented by C. W. Pape, had for its motto, "Be Sure You are Right, then go Ahead." After a recess of ten minutes, a quartett consisting of G. W. Smith, J. V. Patten, Chase Cole, and A. C. Cutler favored the Society with a pathetic song "Peter Grey." The hearty encore was responded to by singing "Old Cabin Home."

Under the order of discussion, the subject, "Our Daily Newspapers, Should we Patronize Them? Do They Corrupt the Morals of the People?" was presented by A. C. Cutler and discussed by different members of the Society. The principal points brought forth were the advantage of dailies over the weeklies and magazines; they are patronized by the most progressive class of citizens; matter which the people demand is printed. In accordance with the new order of things, the Critic then made a report, and was followed by general criticism. The orders of unfinished and new business, as usual, were lively. Among the visitors of the evening were G. W. Smith and G. K. Thompson, both of '93. Each was called upon for fatherly advice, and each responded. Adjournment.

F. E. U.

February 9th.

The attendance at the Alpha Beta Society rooms is growing, and the sessions are growing in interest. Society was opened by Pres. Smith. Miss Paddleford, accompanied by her sister, favored the Society with a solo. Prayer was offered by Gertrude Havens. The reading by Chas. Harling was a choice selection, well delivered. J. M. Rice, one of our new members, spoke a comic poem written in the darkey dialect. The question for debate was proper at the time, but at present is undebatable. "Resolved, that Gov. Lewelling was justified in removing Mrs. Lease from the State Board of Charities." Mr. Timbers and Miss Shofe argued the affirmative, and G. L. Christensen and Cora Thackrey the negative. The history, character, and idiosyncrasies of Mr. Lease's wife having been discussed, the judges decided unanimously against the Governor. "Life is a Series of Surprises" was the appropriate motto of the Gleaner as edited by O. H. Halstead. In it the recent Hamilton Annual was fairly criticised and other interesting articles showed that this issue was up to the standard. Music, a trio, by the Misses Palmer and Grace Secrest. During extemporaneous speaking the Annual Society Lecture was discussed and there was much sentiment in favor of J. Whitcomb Riley. After initiating three new members, Society adjourned. G. W. F.

Means of Growth on the Farm.

Like most of our great men of affairs, Leland Stanford came from the farm. But nothing could be more mistaken than the idea that these farmer boys who have attained distinction and honors were at a disadvantage on account of their origin and early training. A good old-fashioned farm—always supposing the right kind of parents—has hitherto been the best school in which the practical abilities of young Americans could possibly have developed. The times have changed, and we have become a nation of city dwellers and of industrial specialists. A new environment of educational life must of necessity be devised if there is to be brought out in the most desirable forms the capabilities of brain and hand that are latent in the myriads of young townsfolk. The self-reliance and versatility that the farm life produced must be developed in these young people by some means for the farm as a training school is not accessible to them, Such adjustment of educational methods is entirely feasible, but as yet it has been to so limited an extent that it remains true that the farm is the chief and best school for the training of capable men that exists in the country. It is otherwise in Europe, where one does not find a class corresponding to the independent American farmer. But with us the farmer is a superb trainer of boys. His lads are learning real things, while the town boys too often are studying in books the pale reflection of things.

Nor is he totally deprived of opportunity to know the things that are in books. There is more reading done in our farm neighborhoods than in our cities; and the good typical farm home has its newspaper always and its magazine quite frequently. Nor are the district schools so inferior, though their quality varies much from year to year. With a good teacher in charge, the country district school is better than the city graded school, because it is more free from mere machinery and better adapted to develop the individuality of pupils. Hundreds of men and women of high standing and wide experience to-day are thankful for the little wooden country school house of their childhood days, in which the educational methods pursued were infinitely more scientific and valuable than those now followed in many of our country schools.—*Albert Shaw, in Review of Reviews.*

The Secret of Success.

To be truly successful, a man must be able to rise after failure. The general whose campaign is commenced amid a series of disasters, but who, nevertheless, by repairing his mistakes, concentrating his forces, and watching his opportunities, carries triumph ont of defeat, is the truly great captain. The statesman or orator whose maiden effort was covered with confusion and ridicule, but who resolves—in spite, or rather because of this—that he will force his opponents to hear and to respect him shows that he is a great man. The ability and readiness to learn from failure is the secret of success.

The man who has only an eye for difficulties will not succeed. When Howe was appointed commander-in-chief in the Mediterranean, a question concerning him was asked in parliament, to which Lord Hawke, then first lord of the admiralty, replied: "I advised his majesty to make the appointment. I have tried my Lord Howe on important occasions. He never asked me how he was to execute any service, but always went and did it."

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

A fine piano has been placed in the Wamego high school.

The Osborne high school has an attendance of sixty pupils. There will be eighty next year.

Prof. W. C. Lansdon, of the Kansas Normal College, has become the editor of the Fort Scott *Monitor*.

The next meeting of the Riley County Educational Association will be held in Leonardville, March 24th.

There will be an examination for the Kansas appointees to West Point, February 28th, at Fort Leavenworth.

Mr. Will Snow, son of Chanceller Snow of the State University, is compiling for publication a list of the flies and diptera of Colorado.

During the holidays, Prof. Blake, of the State University, purchased two seventy-horse-power boilers for his new physical laboratory.

The Emporia *College Life* offers its readers who pay cash for the paper a picture or two "for the first time in the career of any educational journal," as it puts it. Yea!

Prof. W. H. Carruth, of the State University, has prepared the text for a new edition, with notes, of Schiller's "Wallenstein." The book is being published by Heath and Co., Chicago.

The College of Emporia will graduate thirteen students at the June commencement. Each will receive the degree of A. B. or Ph. D., and seven of the number will enter the ministry.

It would be desirable if all the students of the University could be assembled once a week at the chapel service so that announcements could be read. By this means, the University spirit would be cultivated. —*Students' Journal.*

The Riley County Educational Association held its third meeting at Manhattan last Saturday. Bad weather interfered with the attendance expected from the upper part of the county, but the program was well rendered, and the debates rich and interasting.

The grand total of the University attendance as it will appear in the new catalogue will be fully 1,200. This number, of course, includes University extension students. The students proper of the institution will number about seven hundred, without counting the names of the pupils in the Music Preparatory.

The City Council of Emporia have passed an ordinance providing that all Emporia dealers in cigarettes shall pay a license tax of $500 per year, and that to no children under 16 years of age shall cigarettes be sold, under penalty of $100 fine and thirty days in jail. A short time ago the *Gazette* began a war on cigarettes, making some very grave charges. An investigation by the parents showed that not only the majority of the boys but also a large number of the girls were addicted to the habit. The Board of Education was appealed to, and passed a resoution setting forth the facts of the case and asking of the City Council immediate action. The dealers say they cannot afford to pay the license, and it is thought that the ordinance of the Council will effectually stop the sale of cigarettes in the City. Mayor Smith is a tobacconist and, as the ordinance will hurt his business more than that of anyone else in town, he says that he will veto it, but as the vote was unanimous, it will be passed over his head.—*Exchange.*

The State University *Journal* contains the following rather queer news item: "A telegram received from the Rev. Hector W. Cowan announces that he has accepted the position of Professor of Physical Culture and Chapel Director in the University. His salary will be $1,000 a year, and the citizens, committee of Lawrence has agreed to be responsible for its payment. Professor Cowan is now pastor of the Presbyterian church at St. Joe, Missouri, and will continue his religious work as chapel director. As Professor of Physical Culture he will have charge of the physical training of the students, coaching all the athletic teams of the University. He will come by March 1st. Look in Walter Camp's book entitled "American Football," you will see as the frontispiece the portrait of Hector W. Cowan, Princeton. While on the football team in this institution, Mr. Cowan was universally acknowledged to be the best player of position—tackle—in the country. He was chosen member of the All American Football team, an organization which is to football players what the honorary Greek letter fraternities are to college students in general. Mr. Cowan was one of the coaches of the Princeton team, which was victorous over Yale this year. He is an earnest Christian as well as an athlete, and under his influence we may expect a great increase of interest in the religious exercises of the University."

To Cure Stumbling in Horses.

There are two causes which produce stumbling in horses that are addicted to the habit. One is a general weakness of the muscular system, such as will be noticed in a tired horse; and the other is a weakness of the exterior muscles of the leg, brought about by carrying too much weight on the toes.

To effect a cure, when stumbling is induced by the latter cause, lighten the weight of each front shoe about four ounces, and have the toes made of hard steel instead of iron. Have them made rounding, like the shoe when it is about one-third worn. Give the horse a week's rest, and have the legs showered with a cold spray for a few minutes two or three times a day. When you begin driving do not jog him slowly, but let him walk or else drive sharply for a mile or two andthen walk. Do not speed him for several weeks.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

MANHATTAN ADVERTISEMENTS.

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SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

SHAVING PARLOR.

6 BATHS, $1.00 cash. 12 shaves, $1.00 cash, Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, South Second Street.

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THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

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All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

HARDINESS OF FRUIT VARIETIES.

BY PROF. S. C. MASON.

WHAT constitutes hardiness in a given variety? The most common answer to this question would be the ability to endure a certain degree of cold. Varieties are frequently advertised with the statement that they have endured without protection 18° below zero, or 22° or 25° below, and it may often be the case that these statements are strictly true.

Does it, then, follow that the one who plants these varieties in a climate where greater cold than that is never experienced will be sure of fruit every year? By no manner of means. Hardiness should be made to include much more than ability to endure cold weather without injury. It must mean ability to endure all the vicissitudes of climate to which the plant may be subjected in a given locality. A variety may endure a temperature of 20° below zero in one State and fail in another with a record of only 14° below. Again, it may bear a good crop of fruit after a winter with a record of 20° below zero, and the next crop on the same plants may fail, the mercury not having been below —14°.

Our present winter in Kansas has been a most remarkable one, and very severe on certain varieties of fruit and ornamental plants. During the early part of the winter, our papers were advertising a climate superior to that of California. All kinds of out-door work were carried on as though it were but October. Cautious fruit-growers began to shake their heads and look anxiously at the buds. Blossom buds on the soft maple and Japan quince were swollen nearly to bursting. The sap from box-elder and several varieties of maple flowed freely. From 65° to —14° in forty-eight hours will test the hardiness of all the "Ironclad" and Russian fruits in the region.

It is too early yet to fully estimate the result of having our spring in January and our winter in February, but it is safe to say that any plant that yielded to the seductive influence of those warm south winds until its fruit buds began to swell will be found wanting when the harvest time comes. Peaches, as a matter of course, are destroyed. Even those laid down and covered with a thick layer of straw were sufficiently warmed up on the upper and sunny side of the pile to be killed by the sudden freeze. Branches next to the ground and on the north side still show some sound buds.

Much of fruit failure commonly attributed to the winters could more properly be traced back to the season before. Severe summer drought, followed by autumn rains which start a late growth, and this suddenly checked by a sharp freeze, will as surely be followed by fruit failure as the most trying winter.

The failure of our apple crop for the past two years may be traced in part, at least, to another set of conditions. While most varieties of apples bloomed freely, late frosts and cold rains injured the bloom and prevented the bees from flying, so that the work of pollination was not accomplished. It was noticed both seasons that-late blooming sorts, such as Rawle's Janet, escaped the worst weather and gave a partial crop.

It is natural that hardy trees and plants should be in demand; and the fruit-tree fakirs are quick to take advantage of this, and "work" the trade for all there is in it. "Prove all things, and hold fast that which is good," does not mean buy every new "Ironclad" that is offered at four prices. The latest thing that the tree-peddling gentry are offering to a needy public is the peach budded on "Canadian stocks," whatever those may be, with the assurance that the sap in such trees "goes down" when winter comes, presumably so deep as to be out of reach of such sudden cold snaps as the one lately experienced. The modest price of fifty cents per tree, one-half down and the balance the third year, provided the trees bear, will doubtless find many takers.

The lamented showman, P. T. Barnum, proved himself a great philosopher when he said that the American people like to be humbugged. That the average farmer is not entirely behind the rest of his countrymen in such matters, is proved by the number of "frost-proof," "blight-proof," "drought-proof," and otherwise indestructible nursery material the agents are able to take orders for. The farmer who is really in quest of the hardiest and most profitable varieties will do well to study the voted lists of the State Horticultural Society from year to year, select that which has been tried and proved for his section of the State, buy his stock direct from his nearest reliable home nursery, then plant and tend with the utmost care. He may miss a bargain once in a lifetime by failing to buy some of the wonderful things that are brought to his door on colored plates, but he will miss being bitten a hundred times.

OUR STEER-FEEDING EXPERIMENTS.

BY ASSISTANT F. C. BURTIS.

THE steer-feeding experiments of this winter are proving as interesting and instructive as former experiments of this kind. The ten head that are being "full fed" will be ready for the market in two or three weeks. The subject under test this year is the advisability of soaking corn for fattening steers. A remarkably even bunch of steers was procured from a farm not far from Manhattan. They are good grade shorthorns, two years old the spring of '93. They had been fed some corn during the fall, and were in extra good order. The ten head were divided into two lots of five each. Care was taken to make the lots average as nearly equal in all respects as possible. They are fed out doors, but have a comfortable shed to go under.

Shelled corn is fed to both lots. The corn for Lot I. is soaked in water until it can be readily cut with a knife. At the present time, it must be soaked from seventy-two to eighty hours to accomplish this. When soaked so long, corn will absorb 38 per cent of its weight of water. A day's feed of corn is weighed out and then put to soak. Thus, if 125 pounds of corn is weighed out, it will weigh 172.5 pounds when fed.

The day's feed of corn of each lot is divided into five parts so as to feed at five intervals during the day. When fed in small quantities this way, the soaked corn will be eaten up before it has time to freeze.

The feed of corn was gradually increased from the beginning until each lot had all it would eat. This is about 125 pounds for each lot. Attempts have been made, but have failed, to get them to eat more than this. As a general rule, they eat this up clean every day, but sometimes they are a little slow to come up to eat when the feed is put in.

The appetites of both lots have been remarkably regular. After the experiment had been in progress about four weeks, Lot I. was seriously "off feed" for over a week. Lot II. was "off" at the same time, but for only a couple of days. The difference in the amount of corn eaten by the Lots is accounted for here mostly, for since then the Lots have eaten about the same amount.

Fifteen per cent of the corn fed passed through Lot I. and 20 per cent passed through Lot II. This was all saved by hogs that follow them. Each lot of steers is followed by eight shoats. These hogs have required some corn in addition to what they get from following the steers. From December 15th each lot of hogs was fed sixteen pounds a day until January 4th, from which date the amount fed was reduced to eight pounds a day for each lot. This gave the hogs in Lot II. all they wanted to eat, but the hogs in Lot I. always show signs of hunger.

The following table will show something of the results from November 7th:—

LOT I.

FEED, SOAKED CORN.	*Pounds.*
Weight, February 6th	6,486
Weight, November 7th	5,303
Gain in 91 days	1,183
Average daily gain per head	2.6
FEED EATEN.	
Shelled corn (dry weight)	9,534
Fodder (stover)	6,398

LOT II.

FEED, DRY CORN.	*Pounds.*
Weight, February 6th	6,422
Weight, November 7th	5,310
Gain in 91 days	1,112
Average daily gain per head	2.44
FEED EATEN.	
Shelled corn	9,997
Fodder (stover)	6,244

Weight of hogs running with steers:—

LOT I.

	Ponnds.
Weight, February 10th	1,041
Weight, November 16th	704
Gain in 85 days	337
Extra corn fed	616

LOT II.

Weight, February 10th	1,103
Weight, November 16th	705
Gain in 85 days	368
Extra corn fed.	616

We may sum up the results for the two lots of steers as follows: Lot I. has seventy-one pounds of gain and 463 pounds of corn that may be credited to it. Lot II. has 154 pounds of fodder and 61 pounds of gain in the hogs that may be placed in its favor. The reader

may judge for himself as to the labor required to feed soaked corn. Aside from this, we might credit the lots as follows:—

LOT I.

71 pounds of gain, @ $4.00 per cwt	$2.84
463 pounds of corn, @ 40 cents per cwt	1.85
Total of credit	$4.69

LOT II.

61 pounds of pork, @ $6.00 per cwt	$3.66
150 pounds of fodder, @ 15 cents per cwt	.23
Total of credit	$3.89

If the prices assumed are admissible, we would have eighty cents to pay for the labor of soaking the corn. The price per hundred weight assumed for the pork and beef are high for the present market, but as the result is figured on a small number of pounds, the result would not be changed much if the price per cwt. was changed a cent or two either way.

These results are not given as conclusive, but their relation to each other are not likely to be changed much when the experiment closes. The largest gain of any one steer is 288 pounds, the gain of steer No. 3 in Lot I. The largest individual gain in Lot II. is 267 pounds. The smallest gain of one steer is 194 pounds, and is in Lot II. The smallest gain in Lot I. is 210 pounds. The equality of the two lots is so near that there would be no discrimination between them at market.

As the above report was made out up to February 6th, before our late storm, it might be well to add that the weights this morning (February 20th) show that Lot I. weighs thirty-five pounds less and Lot II. eighty-eight pounds less than they did two weeks ago. Both lots have eaten a little less than the regular amount of corn the past two weeks.

IS LIFE WHAT YOU MAKE IT?

BY A. E. RIDENOUR, '95.

FROM childhood to manhood and womanhood, we have had quoted to us the maxim, "Life is what you make it," until it has become a settled condition with the most of us. Before accepting this as the whole truth, one should make some investigation, on his own account, and prove for himself its validity.

It may be true that many persons have the governing of their actions largely in their own hands. But vastly greater is the number who are subjected to the will and influence of others; who furnish, as it were, the impulse which either directs the youth upward to a life of usefulness, or downward to a life of crime, thus making his life not what he would have made it, but in harmony with the ideal of his trainer.

We ask, "Where most is this influence exercised?" and experience replies, "In the home." We think, surely, when from under the influence of this controlling power, man has the working out of his own destiny; but again, experience reminds us that as the twig is bent so the tree inclines.

Henry Ward Beecher thinks that in order to hold a man to a strict moral responsibility, he should be able to choose his grand-parents, which is equivalent to selecting his parents. How this may be done, science has yet to discover. As it now is, no one has a voice in saying whether he shall first open his eyes in a home where blooming flowers and singing birds welcome him, and love reigns supreme, or within a haunt of vice. His parents may be good and wise, or wicked and ignorant. Under the latter condition, one may have, as he grows up, a longing for something better, something nobler, but fastened as by bands of iron to the miserable life of crime. How can he be other than what he is?

"Man," it has been said, "is a result—a result of forces tending toward him centuries before he appeared; a result over which his own free will and actions have but a very limited, modifying influence."

Like the ridge-tile of a house in Derbyshire, which decides whether the rain falling from Heaven shall be directed to the German Ocean or the Atlantic, influences entirely beyond the control of the child determine its life career.

PERIODICALS IN THE COLLEGE LIBRARY.

BY PROF. D. E. LANTZ.

THE State Agricultural College has been fortunate in being able to obtain more or less complete sets of a number of valuable periodicals. As the number of volumes of a periodical increases, it often happens that the larger circulation has so increased the demand for the earlier volumes that they become scarce and difficult to obtain. And this scarcity is sometimes independent of the actual literary value of the journal. For instance, the early volumes of the *Cosmopolitan* are difficult to find, because the popularity of the later volumes has made a demand for complete sets. On the other hand, the early volumes of the *Atlantic*, the best literary journal that America has yet produced are easy to find and comparatively cheap, because there is not a very much wider circle of readers now than at the beginning of its publication.

The current magazines are of great use to the readers in any library, and especially to college students; but they become much more useful when they are bound up into volumes with a proper index: even then they are not perfectly available without the general topical index to the contents of all. Such indexes are supplied by a general coöperation of the larger librarians of the country.

Poole's Index to Periodical Literature, as it is called, is now furnished bound in three volumes with separate alphabets; and has catalogued a large proportion of the general magazines published in England and the United States down to the close of the year 1892. The same coöperation furnishes us with the Annual Literary index issued soon after the close of each year.

It is the presence of such helps as these indexes that makes the possession of bound magazines so valuable to a student. He can find the articles he wants, if they are in the library. He need not hunt through a dozen volumes to find a vaguely remembered article which he has once read. The index directs him at once to volume and page.

For the convenience of Faculty, students, and friends of the College, it is my purpose to publish in the INDUSTRIALIST, next week, a complete list of the bound periodicals and magazines now in the library, with such particulars as will be useful to give all a knowledge of what we possess. It is my hope that it may be of service, too, in pointing out what we lack, with the view of leading friends of the College to donate to us old magazines which are useless to them, because they do not desire to bind and preserve them.

Even duplicate sets of the more popular magazines would not come amiss in our library. Indeed, we have several sets which are badly worn, and which will have to be replaced at no distant day. The possession of duplicate copies would enable us to preserve a good set from rough usage and make it possible for us to circulate the volumes without some of the restrictions which seem to us necessary at present.

A State Engineer for Country Roads.

As far as can be judged from the views expressed before the House Committee on Roads, last week, the sentiment of the people of Maryland is strongly in favor of the bill providing for a State Road Engineer. Gentlemen from all parts of the State were present, and they were in entire accord as to the importance of the measure and the practical good which will result from it. The bill, as has previously been explained in the *Sun*, provides for a department of roads and highways, with an "expert engineer" at its head, who is to make a careful study of the road question in Maryland and report to the next Legislature, and who is to be at the service of the county commissioners of the various counties whenever they choose to call upon him for advice or assistance in the improvement of county roads. This service is to cost the counties nothing, nor is the employment of the engineer in any way to supersede or interfere with local authority. The counties can avail themselves of the help of the expert engineer in making their roads, or not, just as they please, and if they do call upon him, their power and freedom of action are in no way impaired. He will have no more authority under the bill than any private engineer whom they might engage to carry out their plans or advise them as to the best methods of procedure. The only objection that has been suggested in regard to the measure is the annual appropriation of "not more than $25,000," which it involves, but it is doubtful if $25,000 a year could be spent to better purpose than for the object which it contemplates, or for one which would return a more immediate profit. A very large proportion of the $350,000 spent on roads every year in Maryland is unquestionably wasted through lack of scientific knowledge and oversight in the methods of doing the work. A State engineer would pay for his department several times over in the course of the year by causing the money which is spent on roads to be applied to them so intelligently as to produce something more than mud and holes. The counties are much more directly interested in this subject then Baltimore, but anything which tends to increase the value of farming lands and to improve agricultural conditions is to the advantage of this city also, and it is to be hoped that a mistaken conception of economy may not delay the inauguration of the systematic plan of road improvement which is so strongly demanded by the interests of the whole State.—*Baltimore Sun.*

FARM NOTES FROM VARIOUS SOURCES.

Wolves and foxes are destructive, but not more so than the rabbits they serve to keep from multiplying. *Cultivator.*

Make the farm poultry some one person's business, and note how much greater the poultry product will become in a few weeks.—*Cultivator.*

The spraying pump has lost none of its virtues. If it is less talked about it is because the sprayer is recognized as a necessity on the farm.—*Cultivator.*

While it is desirable to work horses young, care must be taken to put them only at light work, allowing the more mature animals to do the hardest work.

After mature deliberation, if a new line of work or a new business idea seems feasible, nothing should stand in the way of carrying it out in the fullest detail.

Poultry culture is a means of converting one's labor into cash; he who labors in the right direction and with the best breeds secures the highest price for such labor.—*Farm and Home.*

It is the chattering of ignorance, the vaporing of thoughtlessness, the snarl of brutality, to say that there is an "overproduction" of the necessaries of life.—*Farm, Stock, and Home.*

There is no mistake in stating that of all persons who know little or nothing of poultry it is the farm hand. It requires an expert to conduct a poultry business which demands a large number of fowls. No man who is capable of managing a poultry business can be hired at ordinary monthly wages.—*Mirror and Farmer.*

People are all thinking and working, and what one thinks may be of use to many others, and experience, whether successful or not, is what knowledge is based on. Facts of home life and stock and farm experience can be made of interest to the general reader and will draw out similar reports. It is time now to be thinking about the work for the next year; it is a good time to be asking questions, and these will be acceptable and opportunity given for all to give their opinions. The young farmers and prospective housekeepers should learn to express their ideas and improve themselves as well as interest others. Let the good work go on. Some of the most valued "acquaintances" the writer has are those picked up in such correspondents in the papers and whom he has never met personally.—*Mirror and Farmer.*

Good things from the *Mirror and Farmer*: Burn all the chips and increase the pile of ashes.—Look over your seed catalogues and make your selections.—When men go with a rush, but few can be in the lead.—The very best cow can be spoiled by a week's mismanagement.—Do not plan too large improvements.—Be thorough as far as you go.—Try new things, but do not depend on them.—Handle novelties with caution.—An animal's appetite should determine the quantity of salt it should have.—Send your boys to the short course at the agricultural college, and it will not harm you to go.—Every farmer's farm is his bank and he the depositor; so your credit depends largely upon your drafts.—No other kind of live stock will turn the wastes of the farm into valuable merchandise quicker than the hogs.—It will pay better to feed the milk fresh from the cows to the pigs rather than to make it into poor butter.—The time is coming when wind or some other power will be used to prepare corn stalks for stock to eat.—It is an exceptional case that a growing animal will take more exercise than is really best for health or thrift.—Success in anything means a thorough plan to begin with. This followed with every detail carried out will bring the desired results."

The Farmer Boy's Start in Life.

We have frequently stated in these columns our firm conviction that the farmer boy had the advantage of all others in his start in life, and as an evidence of this, have often pointed to the fact that many of the leading men, and in the West a very large proportion of them in all departments of life, wheither in business or in the professions, point with pride to the fact that they were born and brought up on the farm, and received their elementary education in the country school house. We have often felt that many of our readers, and especially the boys, would suspect us of giving them "taffy," being unable to see why the city boy that has apparently greater advantages in the city school, freedom from hard work, and abundance of money did not have superior advantages to the boy raised on the farm. As they become older, they will find that instead of flattery we have been telling them the simple truth; that these apparent advantages of the city boy are not real; that instead of helps they are hindrances; that there is no real superiority in the city school over the best country schools, and far less opportunity for a real bright boy to forge ahead in his work.

The opportunity of spending money is one of the serious disadvantages of the city boy, and particularly so if his father be a man of means. Public sentiment in the city compels the boy to dress in the style of the family, and he thus acquires habits of spending money and luxuriant tastes long before he has the opportunity of earning the means wherewith to support them. One of the most serious difficulties that the professional or business man has to meet is to find some way of throwing the boy on his own resources and making him learn what a dollar is worth by actually earning it.—*Live-Stock Indicator.*

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

E. M. Fairchild is at home for a short visit.

Mrs. Chas. S. Prosser, of Topeka, was a visitor at College on Tuesday.

M. V. Hester, Fourth-year, was out of classes a few days this week on account of sickness.

A half-dozen or more students attended the Oratorical Contest at Topeka, last evening.

Mrs. Mails and Mrs. Coons were among the visitors at the public exercises yesterday afternoon.

Prof. and Mrs. Georgeson entertained a few friends Wednesday evening in honor of Miss Brooke.

Dr. Pritchard, State Veterinarian, is today assisting Dr. Mayo in some experiments with tuberculin.

Olive Wilson, Third-year, returned to classes Tuesday, after a week's absence on account of sickness.

Capt. Cavenaugh, the newly appointed Professor of Military Science and Tactics, is expected Tuesday.

D. C. Arnold, Third-year, enjoyed a visit from his parents, Mr. and Mrs. J. W. Arnold, of Louisville, last week.

The Alpha Beta Society presented a Washington Day program, yesterday, to a full house of visitors and members.

Dr. Brown, of Minneapolis, one of the editors of the *Northwestern Congregationalist*, visited the College on Saturday last.

I. A. Robertson, Third-year, spent two days in the Probate Judge's office this week during the absence of his father, the Judge.

Mr. Baxter, Foreman of the Greenhouses, succumbed yesterday to an attack of grip which made its presence known a few days ago.

Mr. Trowbridge of Chicago, agent for the Sneed library case, visited the College this morning. He will bid on the furniture for the new library.

A number of students took advantage of the holiday on Thursday to visit their homes, some of them being excused from Friday's classes to extend their visit until Saturday.

C. R. Hutchings, Fourth-year, went to Newton last Tuesday as a delegate to the Sons of Veterans meeting. After visiting his home at Pomona, he expects to return on Monday.

A. C. Cutler, Second-year student, yesterday morning sold fifty copies of the Washburn College *Mid-Continent* containing the orations delivered in the State contest at Topeka last evening.

The abolition of fees in music has resulted in the largest classes in the history of the College, there being now in vocal classes 109 students, and in instrumental classes 92. It is hardly necessary to add that Prof. Brown is a busy man.

Miss Dora Cady, State Secretary of the Young Women's Christian Association, led the meeting in Horticultural Hall Sunday afternoon. On Monday morning, she brought good cheer to the students in chapel, and at noon tested the cooking of the Second-year girls in the Faculty dinner.

Dr. Ramm, Professor of Agriculture at the Royal Agricultural Academy, and Commissioner of the Prussian Government at the World's Exposition, writes for a series of photographs of varieties of wheat raised by the College Station in 1891, expecting to use them in making his report on the Exposition.

The Winter Term Social on Wednesday evening brought out a goodly number of students, who were first entertained by stereoptican pictures of College grounds, buildings, interiors, classes, and societies chosen from the large number of negatives made for the World's Fair. A burlesque art gallery, properly numbered and catalogued, contributed much amusement.

A choice collection of seventy-five ores of gold, silver, lead, and copper from the province of Akita, Japan, find a place in the Chemical Laboratory museum this week. This collection was exhibited at the World's Fair and presented to Prof. Georgeson by a former student, a native Japanese, who is now holding a government position in Tokio. The collection was presented as a souvenir of a trip Prof. Georgeson made through Akita and other northern States of Japan in 1888, with the donor as interpreter.

The First Division of the Third-year Class entertained the chapel audience yesterday afternoon in a long but interesting program of orations, as follows: "The Salvation Army," Daisy Day; "Our English Language" (Declamation), Con Buck; "Solved and Unsolved Problems," B. W. Conrad; "Fads," Flora Day; "Our National Emblem," E. L. Brockway; "Siberian Exiles," Lucy Ellis; "Choice of a Profession," R. J. Barnett; "The Coming Sovereignty o Intellect," C. D. Adams; "The Old Maid of Yesterday —The Woman Bachelor of To-day," Florence Corbett; "Progress in Flour-milling," D. C. Arnold. Music, Solitude, by Mary Finley, was well received.

The College orchestra for the Winter Term is composed of the following students: D. C. Arnold, M. Bennett, E. L. Brockway, R. H. Brown, W. E. Bryan, R. W. Clothier, L. Clemens, G. Doll, C. Dolby, P. Fox, G. W. Fryhofer, E. L. Frowe, R. Helder, H. G. Johnson, G. Lyman, J. Poole, H. Walters. The Cadet Band of twelve pieces consists of F. W. Ames, D. C. Arnold, R. H. Brown, E. L. Brockway. E. L. Frowe, H. G. Johnson, J. J. Johnson, W. I. Joss, R. Mangelsdorf, O. E. Noble, A. L. Peter, H. M. Sharp.

GRADUATES AND FORMER STUDENTS.

D. T. Davies re-enters Third-year classes aftera year's work on the farm.

Chas. D. McCullough, student in 1891, is teaching n Pottawatomie County.

C. W. Helder, Third-year in 1888-9, visited with College friends yesterday.

Ralph McDowell, student in 1888-9, attended chapel exercises Friday morning.

Lou Stingley, Second-year last term, attended chapel exercises Monday morning.

Minnie Moffett, student in 1891-2, was married in Manhattan, February 22nd, to R. E. Williams.

Fannie Thackrey enters Second-year classes after a year's work in the printing department of the *Republic* office.

There is a reunion at Eskridge, this week, of three members of '93—Laura G. Day, Edith McDowell, and Eusebia Mudge.

W. O. Peterson, Second-year in 1893, was a caller at College on Tuesday. His parents have recently moved to Manhattan, and he expects to re-enter College in the Spring.

W. J. Town, Third-year in 1890-1, writes from Troy, N. Y., where he is taking a course in higher mathematics, that he is also doing some work in blow-piping and that the platinum-tipped pipes such as one gets there don't fill the bill—that his mouth waters for one of the old clay ones such as he used to have while here. A couple such as he desires were sent him. Mr. Town's name appears on the editorial staff of the *Polytechnic* as Business Manager.

Scientific Club.

February 23rd.

President Nichols called the meeting to order. The minutes of the last meeting were read, corrected, and approved. Prof. Nichols presented the subject of lightning rods, reviewing the experiments of Prof. Lodge, of Liverpool. These experiments go to show that in case of continuous discharge, any pointed rod, whatever its resistance, will protect an object near it, even if the object is somewhat higher than itself. But in the case of an impulsive rush, as when a positively charged cloud discharges through one or two neutral clouds to the earth, the lightning will strike a good conductor in preference to a poorer one of greater height and more attractive shape. Prof. Lodge recommends that houses be protected by rods running up each corner and up the edges of the roof to the ridgepole, and connected by a rod along the the ridgepole, the connecting rod to be furnished with points along its entire length; also that the rods consist of iron wire, of rather small size, as a small wire offers less opportunity for a return shock than a large one. In the discussion which followed, the grounding of wires of pasture fences, as a protection to animals against lightning, was recommended. Under voluntary reports, Prof. Hitchcock told of an experiment in feeding formaldehyde to plants. Dr. Mayo spoke of auroras. Prof. Willard reported upon experiments in the condensation of permanent gases, the invention of a new explosive, the use of ammonia as a disinfectant in sick rooms, and the use of electrolyzed sea water as a disinfectant of sewage. Adjournment.

The following from the Kansas City *Home Market and Stockman* will be interesting as showing the sacrifice necessary to prevent the spread of disease and because of the connection of H. M. Cottrell, '84, with the herd in question. "Nine of the valuable herd of Guernsey cattle owned by ex-Vice-President Levi P. Morton have been killed on account of tuberculosis, by D. P. Jones, of Poughkeepsie, representing the New York State Board of Health. One of the animals killed received the highest prize at the World's Fair. The nineteen were valued at $7,000. Several infected cows were not killed. They will be held until their calves are born, in the hope that these may be born healthy."

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

COLLEGE ORGANIZATIONS.

Student Editors.—Rena Helder, Stella Kimball, and G. L. Christensen.

Webster Society.—President, J. M. Williams; Vice-President, J. V. Patten; Recording Secretary, B. F. S. Royer; Corresponding Secretary, F. E. Uhl; Treasurer, A. C. Cutler; Critic, E. H. Freeman; Marshal, A. G. Bittman; Board of Directors, C. R. Pearson, E. H. Webster, E. L. Brockway, G. A. Dean, and R. P. Newman. Meets Saturday evenings at 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta.—President, Jennie R. Smith; Vice-President, J. C. Christensen; Recording Secretary, Elva L. Palmer; Corresponding Secretary, Geo. W. Fryhofer; Treasurer, Fannie Parkinson; Critic, Lucy Waters; Marshal, W. H. Phipps; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, G. L. Christensen, Stella Kimball, C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Ionian Society.—President, Phœbe Turner; Vice-President, Hortensia Harman; Recording Secretary, Minnie L. Copeland; Corresponding Secretary, Maggie A. Correll; Treasurer, Lynn Hartley; Critic, Mary Lyman; Marshal, Rena Helder; Board of Directors, Ethel Patten, Maud E. Kennett, Blanche E. Hayes. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Hamilton Society.—President, C. R. Hutchings; Vice-President, E. L. Frowe; Recording Secretary. C. N. Brobst; Corresponding Secretary, A. P. Carnahan; Critic, V. I. Sandt; Marshal, J. A. Hoge; Board of Directors, J. A. Scheel, B. W. Conrad, F. A. Dawley, F. Smith, C. S. Evans. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

February 17th.

The Websters were silenced by the sound of the gavel and the voice of Pres. Williams promptly at 7:30. The muddy walks did not keep the enthusiastic Webster in his room, as was shown by the roll-call and the fact that the Marshal was sent for chairs. J. V. Patten led in devotion. The names of G. F. Lechner and G. G. Moore were added to the Webster roll. The question for debate, "Resolved, that the salt industry should be under State control," was affirmed by B. F. S. Royer and S. G. Britton as follows: The subject of State control of a number of industries is being agitated; salt should be one of them; State ownership would prevent combines; salt is a necessary article, and should be as cheap as possible; it should be cheap enough to be used also as a fertilizer; wages would not be affected if the State controlled the industry. S. A. McDowell and F. H. Meyer denied the above by stating that if the salt industry were owned and controlled by the government, the ownership of other industries also would be agitated, and all of these the government could not afford to buy; if salt were cheaper, laborers' wages would decrease accordingly; the ownership by State would be a great evil as giving ground for political power. Following debate, W. A. Cavenaugh delivered a declamation, "Science and Kissing," which exposed the dangers of that apparently harmless art. In an essay on "Letter Writing," H. O. Rhoades gave us some practical points. After a recess of ten minutes, the Society listened to a humorous recitation delivered by F. Zimmerman entitled "A London Bee Story." W. J. Rhoades, music committee, introduced A. C. Cutler, who sang a solo, "Love's Golden Dream," which was encored. Under order of discussions, the question, "Should this College Adopt a Drill Uniform?" was presented by F. E. Uhl and discussed by the Society. Nearly all speakers took the affirmative side of the question. The main points were, it would increase the interest taken in drill; it would be economy, the cost of a suit, which would outwear two ordinary suits, being from ten to sixteen dollars; would give a neat appearance to the wearer and accordingly to the College; color, grey; intending students could make arrangements for purchasing suits. The question, "Are the Board of Regents justified in asking that drill be required of First-year and Second-year students?" was presented for general discussion. With two exceptions, the argument was unanimously in favor of the plan. It was stated that it was the intention of the framers of the law regarding the grant to Agricultural Colleges that military drill should be required in the course of instruction, therefore it would be only carrying out the law; there is a growing demand for drill in colleges; some speakers were in favor of requiring drill of every male student, every day in the week, every term of the course. D. C. McDowell,'91, was present, and made a plea in favor of the drill. F. E. U.

February 16th.

At 2:30 o'clock President Turner called the Ionian Society to order. After the opening song, Ellen Norton led in devotion, after which the roll was called, and all except a very few members responded. An unusually large number of visitors were present to hear the program, which was opened by a well-rendered piano solo by Fannie Hacker. Gertie Lyman then recited a very true and beautiful description of "A Sunrise on the Mississippi." "And the value of things exist, not indeed, in themselves, but in man's use of them, feeding man's need," was the motto of an edition of the Oracle, presented by Minnie Pincomb. Emelie Pfeutze and Flora Waugh then sang a duet which was much appreciated by the audience. Next was the debate, on the much-debated and never-settled question, "Resolved, that oratory is a gift, and not acquired." The affirmative was opened by Sue Long, followed by Ora Yenawine. Hilda Leicester led the negative, with Cora Stump as second speaker. The girls did both themselves and the question justice, as they produced argument on both sides showing thought and study. The first speaker on the affirmative referred to the powers of Cicero, Napoleon, Demosthenes, and Webster, mentioning evidences that they had natural gifts in oratory; while the negative met this by stating that Demosthenes only gained his power by long and hard work, owing to a defect in his speech and weak lungs. The affirmative carried their side still farther by referring to a statement in rhetoric which says that no one can hope to be a famous orator without genius, and by calling attention to the fact that the most famous orators the world has known lived in olden times, and had fewer chances

for culture, and stated that if this power could be acquired, there would be many modern Demosthenes. The negative then brought up Chesterfield's own statement that his success in the English Parliament was due only to his own determined will and perseverance. Miss Long, in closing the affirmative, said these men who had to work to gain their position only had to do so to develop the talent or gift they had; and if they had not known they had some such power they would not have spent all this time and hard work on it. Miss Leicester, in closing the negative, insisted that if others would work with as much persistence as these men did they would have an equal reward. The judges, Messrs. Ames, Cavenaugh, and Joss, decided two to one in favor of the affirmative. A vocal sola, "Kiss and let's make up again," by Mabel Farwell, closed the program. M. A. C.

February 17th.

In the absence of the President, the Hamilton Society was called to order by Secretary Brobst, who called R. J. Barnett to the chair. Prayer, F. A. Dawley. E. Emrick opened the program by reciting "The Death of little Jim" in an interesting and effective manner. The question, "Resolved, that success in life more commonly due to opportunity than ability," was ably discussed, the affirmative being presented by M. V. Hester and J. A. Hoge; the negative, by W. O. Staver and S. Robbins. The debate was interesting throughout, both sides bringing forth many strong points. The affirmative's argument was that any man starting into business at the present time, for instance, although he may have all the ability necessary, if he has no capital to start on, will surely fail, as opportunities are not favorable. The greatest failures in life, those of the poor people in the cities, are due to lack of opportunity rather than ability. Napoleon was a man who made a success in life, but we cannot attribute his success wholly to ability, as it depended greatly on the opportunity afforded by the whole of France, which was backing him. Had our Hon. Jerry Simpson been compelled to depend on his ability to make his present success he would certainly have been in "Medison Lodge" yet. Anybody has the ability to get married, but many a man's success in life has been ruined because this wonderful opportunity never came to him. The negative argued that a person starting in business with a small fortune, if he has not the ability to transact his business properly, will soon be swindled out of his money. The poor people of our cities certainly do have poor opportunities, but those of them that do make a success, and there are many such, make it through their ability. The greatest and most prominent men of our country were once poor boys, and had none of the opportunities of life, but their ability brought them to what they are. Abraham Lincoln was a man who made the greatest success imaginable, but he made it through his ability, and is noted for his ability, even as a rail splitter. E. H. Gorham, in his first appearance before the Society, delivered a well-written essay, describing his trip in a pilot boat. The only discussion of the evening was given by A. P. Carnahan. A well-written Recorder was presented by F. A. Dawley, the subject of some of the most important pieces being, "A Little Boy's Essay on Evolution," "A Battle Scene," Looking Backward." W. E. Bryan gave us a declamation on "Free Trade," in addition to which he gave us his own personal reasons for being a Free-Trader. O. E. Farrar read an amusing selection on "Scriptural Giving." Mr. Paddleford, a graduate of the College and an honorary Hamilton, gave an interesting talk at the request of the Society.

A. P. C.

February 16th.

A guitar duet by Nora Fryhofer and Con Buck opened the session of the Alpha Beta Society. Elva Palmer led in devotion. "A Struggle for Life" was the title of a select reading by Florence Martin. It was a genuine anti-climax. An essay by Inez Manchester on, "Why do Girls Dislike Washing Dishes?" was worthy of remark, for the author seemed to know what she was speaking about. "Resolved, that College Faculties should prohibit football as it is now practiced," was a live subject for debate. One of the interesting features of the Gleaner was a letter from our old brother "C. H." from St. Louis. Music. a quartette by J. J. Fryhofer, A. E. Ridenour, M. Spalding, and W. Coffey. The Society was pleased to listen to an extemporaneous address from Mr. Wm. Fryhofer, of Randolph. Speeches from the visitors, F. J. Smith, E. A. Donaven, and R. K. Farrar, were also applauded. Prof. M. A. Carleton, an ex-Alpha Beta, gave a farewell talk. After an organ instrumental by T. L. Jones, Society adjourned. G. W. F.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the bookshelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The Library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The January teachers' examination questions were the fairest that have yet been issued by the new Board.—*School and Home.*

Will not some patron and friend of the school examine the water closets at the school house and report to the School Board?—*Teachers' Voice, Phillipsburg.*

Lenora is struggling hard to secure the location of the Norton County High School at that point. It offers an entire block of ground and $4,000 in cash as a bonus.

Mr. Joseph Farrell, the instructor of violin at the State University and the soloist of the Glee Club, plays Sunday mornings at the Catholic cathedral at Leavenworth.

The *Midland* of Atchison College asks: "What has become of the silver cup which was furnished by Midland for the fountain in the Kansas State building at the World's Fair? We want to know."

The School Board of the city of Topeka set apart the first Monday night in April as a night to inspect furniture for the new High School building, and all furniture houses will be given notice by the Secretary to have their samples on hand.

The *Midland* quotes the following paragraph from an address by Pres. Jordan of Leland Stanford University: "College marks, college honors, college degrees,—all these belong with the college cap and gown and laurel berries to the babyhood of culture. They are a part of our inheritance from the past, from the time when scholarship was not manhood, when the life of the student had no relation to the life of the world."

If teachers were given longer terms of school, paid higher wages, and placed on the retired list at the age of fifty, with a pension for their remaining days, we would not keep our boys and girls in school from five to twenty-one and then even have them unable to tell what 12½ pounds of butter would come to at 12½ cents per pound. Supply and demand rules in this as well as in other vocations. Let us have such inducements as will invite the very best and brightest intellects to especially prepare themselves for life-long teaching. We want to use the teacher for the betterment of our schools. We do not want the teacher to use the school for a short sojourn while preparing for a more lucrative business or profession. Let us encourage our brightest and strongest boys and girls to aspire to this noble calling.—*W. C. Snodgrass, in Educational Advance.*

Mrs. Fannie Reid Slusser, Superintendent of Schools of Wyandotte County, has aroused considerable interest over the question of establishing a County High School at Kansas City, Kansas. Under a law passed some years ago every county having a population of 6,000 or over, as shown by the last Federal or State census, and a valuation of 1½ million dollars or more, may establish a County High School at such place in the County as may be determined by the popular vote; and whenever, in any county having the required population, but not the required assessed valuation, one-third of the electors of the county, as shown by the last preceding election, may petition the board of County Commissioners, praying for the establishment of a County High School, the County Commissioners shall proceed at once to establish such High School. The law is considered a good one, but from the fact that it is not mandatory, its provisions have not been complied with, except in the Counties of Dickinson, Labette, and Atchison. In these Counties it is stated that the expense of running the County High Schools is very small, and their sucessful operation has created great interest in other Counties in the State which, under the law, could establish High Schools. In Nebraska, where Prof. Canfield secured the passage of a County High School law, the words "may establish" appearing in the Kansas law were made to read, "shall establish," with the result that County High Schools are being established all over that State.

Labor and Earnings.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour's daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their ability and means.

All labor at the College is under the direction of the superintendents of the department, and offers opportunities for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with the services rendered, from 8 to 10 cents an hour. The superintendents strive to adjust their work to the necessities of students and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay roll for the past year ranges from $250 to $400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses.

The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

A Good Education Pays.

1. In dollars and cents. All testimony of statistics agrees in showing that educated laborers of all ranks have better work and better wages than the uneducated.

2. In influence and position. Careful estimates make it certain that the chances of promotion to places of trust and power among men are almost two hundred times as great to an educated man as to the uneducated man.

3. In usefulness. The bulk of good work in the world—discovery, invention, government, philanthropy, and religion—is brought about by those who learn to think by study.

4. In enjoyment. Our pleasures grow out of what we are ourselves more than from surroundings. A well-trained man sees, hears, and handles a great deal more of the world than an untrained one. All things do him more good, not so much because he owns them as because he understands them. He always has good things to think about.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

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CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

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W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

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A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

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DR. G. A. CRISE, Dentist, 321 Poyntz Ave. The preservation of the natural Teeth a Specialty.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

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DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

SHAVING PARLOR.

6 BATHS, $1.00 cash. 12 shaves, $1.00 cash, Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, South Second Street.

GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

THE INDUSTRIALIST.

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Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

FOLIAGE FOR THE LAWN.

BY W. O. STAVER, '94.

TO have a lawn well laid out and planted with ornamental trees and shrubs is the glory of every home and surrounding country. In fact, the value of many homes and farms could be greatly increased by planting choice ornamantal trees or shrubs on the lawns surrounding the house, thus making it pleasant and attractive, as well as presenting a more inviting appearance to the general public.

With the improvement of lawns, we should carefully consider the valuable qualities of plants, and not fail to recognize the lessons afforded by our natural woodland scenery. It will thus be proper to touch briefly upon the characteristics of several varieties of trees and shrubs noteworthy in this respect.

Of the many trees used for ornamental purposes, one might naturally turn to evergreens as specially fitted for our purpose; but aside from these there are many other trees equally noted for their beautiful foliage, which during the summer months present a more enlivening aspect, such as can be represented only by the continually changing moods of deciduous trees, as they pliantly answer to the wooing of our softest southwest winds.

There are many plants the foliage of which does not suffer from the early frosts; and a lawn planted with such would present a most beautiful appearance during the later autumn days. The soft maple (*Acer dasy carpum*) is one of our most common ornamental trees. It is healthy, thrifty, and vigorous, though not long-lived, and is valuable for its pleasing foliage and stately size. The catalpa (*Catalpa speciosa*) is much admired now-a-days, both for its enduring wood, and as having a broad, shadowy foliage, which it retains late in the fall. The American persimmon is a noteworthy tree for its delicate foliage and excellent fruit, as well as its beauty at other seasons. The common hackberry, (*Celtis occidentalis*) is well adapted for ornamental purposes because of its delicate foliage and wide-spread branches, thus making an excellent shade for the lawn. The different varieties of spirea assume rich colors during the summer months, and often retain them until the late autumn days. For a shining green foliage, the weeping willow presents the most striking appearance. Its long, pendant branches, laden with luxuriant foliage, make it very useful for ornamental purposes. The common pawpaw (*Asimina triloba*) is very valuable for its fruit, and its long, wide leaves make it especially noted for the lawn. The red bud, a tree with rounding heart-shaped leaves, has red purple flowers, very beautiful to behold in spring when contrasted with its singularly green foliage. This is a very valuable tree and should be more employed as a specimen on the lawn.

But the noblest trees for bright green foliage, as well as other good qualities, are the elms and oaks. Rich in color and picturesque in form, they always give excellent shade; other trees may perhaps be as fine in certain ways, but none can give such entire satisfaction. These trees are not specially early in putting forth their foliage, but are most beautiful throughout the entire summer. The oak especially is strong, sturdy, and enduring, and is admired by many though planted by few. It is transplanted with difficulty, and grows slowly; but when once established is well worth the patience and labor it has demanded.

There are many other trees and shrubs suitable for beautifying the lawn. But these herein named, properly arranged and planted, will greatly beautify the lawn, and enhance the general appearance of a farm.

THE SOCIAL SIDE OF FARM LIFE.

BY G. W. FRYHOFER, '95.

THAT life is what we make it is particularly true of the farmer. He is little affected by his surroundings. Fashion does not bother him much, and he has few fads. He is closely attached to his family, and his characteristics are reproduced in his children. To them he interprets nature, and they are alike the recipients of his good and bad qualities. Thus his surroundings are largely as he would have them; while in the city, the associations, training of children, and business affairs are much influenced by outside forces.

To grow up on the farm has certain advantages and few disadvantages. First of all, the intimate associations with nature, and the actual dealings with material things give a serious, matter-of-fact view of life, which the excitement and illusions of the city tend to destroy. Country life, however, abounds in genuine sport. After enjoying the free air and fun on the farm, the youth arrives at manhood with two of nature's best gifts: a sturdy frame and a never-failing appetite.

Music also has the same power to unite the family and make merry the mid-winter eveings on the farm as elsewhere. Now that instruments and new music are within reach of the country people, the art finds an important place in the well-developed home. It enlivens the present and endears the memories of the past.

To one engaged in farm work, reading is an exceptionally pleasant recreation. Almost every farmer takes at least two periodicals—a county and State paper of his political bias. The rule is more than this, however. It is now practicable for farmers living near town to make use of a daily. Good magazines and weeklies are just as near the farmer as the merchant. Today, too, his library is not necessarily the heterogeneous collection of book-agents' goods. But of all the farmer's literature, there is nothing perhaps out of which he gets so much pleasure as his farm paper.

On the whole, farm life near a large town is much to be desired. The benefits of town society are here within easy reach. The great meetings, speeches, and entertainments can all be taken in. In short, one lives in the country, yet enjoys the best part of city attractions—drinking the country milk and tasting the cream of the city.

TEXAS FEVER.

BY PROF. N. S. MAYO, D. V. S.

SINCE the true nature of Texas fever has been demonstrated, and it is known to be caused by a very small parasite, belonging to the lowest class of the animal kingdom, experiments are being undertaken to prevent, if possible, the spread of the disease by infected southern cattle among those, especially of the north, that are susceptible to Texas fever.

The "germ" of this disease is very interesting. It is well known that most contagious and infectious diseases are caused by microscopic vegetable parasites (bacteria), while this disease is caused by a parasitic animal so small that it lies in the red blood corpuscles, which themselves are microscopic. It has also been demonstrated that the southern cattle ticks (*Boophilus bovis*,) and the "Lone Star" ticks (*Amblyoma umpunctata*) which infest cattle having the "germs" of Texas fever in their blood, or at least the female ticks, are capable of taking into their bodies the "germs" of Texas fever, transmitting them through their eggs to the young ticks, and these in turn are capable of giving Texas fever to susceptible cattle which they may infest.

The life history of the cattle ticks is briefly as follows: The females lay eggs which, under suitable conditions, hatch into larvæ ticks which have only six legs; these soon moult, another pair of legs appear, and the ticks are sexually mature. They mote and the motes soon perish, or at least cease to develop, while the female, by sucking the blood of her host, soon reaches the adult stage, the body being distended with blood to nearly the size of the end of the finger. When fully developed, she drops to the ground and deposits in sheltered places large numbers of eggs, which soon hatch, and the life cycle is complete.

It is doubtful if the ticks or eggs will survive in this latitude, unless the winter is an open one, and the ticks or eggs are in some sheltered spot.

While it has been conclusively demonstrated that the ticks are conveyors of Texas fever from one animal to another, it has not been proven that this is the only way in which the disease can be transmitted. It is probable that the tick is the common means of transmitting the disease. If this be true, and the ticks on infected southern cattle can be destroyed, it is believed that cattle so treated can be sent north at any season of the year without danger of northern cattle contracting the disease.

It is known that various substances used to kill other parasites will also destroy ticks,—sheep dips of various kinds, oils, tobacco water, carbolic acid, etc. Mr. Kleburg, of the Texas Live Stock Society Commission, has devised a dipping vat, arranged with a chute leading to a tilting platform, which precipitates the animal into the vat which contains the "dip." Dr. Francis, of the Texas Experiment Station, says that it is very effective in destroying ticks, mange mites, lice, etc., and that animals can be treated very rapidly and at a very small cost. Arrangements are being made whereby southern infected cattle are to be freed from ticks by dipping, and shipped to the Agricultural Experimental Stations of Kansas, Missouri, and Illinois and there tested by

placing them with some susceptible northern cattle. This will demonstrate whether the ticks are the only means of transmitting the disease, and whether infected southern cattle that have been freed from ticks are capable of communicating the disease. If this experiment in freeing southern cattle from a dangerous disease is successful, the Bureau of Animal Industry and the various experiment stations will have solved a perplexing problem, and thousands of dollars will be saved the live-stock industry in this and other States.

IN THE ALFALFA REGION.

BY SECY. I. D. GRAHAM.

IN eastern Kansas, farming may be said to be based on corn; in western Kansas, on wheat; and between the two, on both. As general statements, these are correct, in a considerable degree, and yet there is a very large area of southwestern Kansas in the Arkansas valley where a successful agriculture has been developed with alfalfa as the principal crop. This agriculture is not of the single-crop sort, but is as comprehensive and as diversified as that of any portion of the State.

Alfalfa as a feed is particularly suited for the building up of bone and muscle in young and growing stock, as well as for the production of milk. Red Kaffir and Jerusalem corn are almost certain crops in this section, and furnish the grains necessary in fattening early. Upon a knowledge of these two facts there has grown and is growing an important stock-raising industry which has its chief merit, possibly, in the quality of young stock that can here be produced for shipment to feeders in the corn belt.

Alfalfa is a most excellent winter feed for "roughing through," for developing young stock, and for winter dairying. Winter butter made from alfalfa alone is of most excellent flavor, and has commanded a uniform price of thirty cents per pound. The seed of this plant finds ready sale at $5.00 per bushel, and yields as high as twelve and one half bushels per acre are not rare. With alfalfa, the apiary is a most pronounced success, and the product of the hives is both large in quantity and delicious in flavor. Eighty pounds of very fine honey to the hive is the reported average of one farmer for last season.

"Every man who raises alfalfa in my county has a bank account," is the statement recently made by a banker living in a county seat situated on the Arkansas river in southwestern Kansas, Can the same be said of any county in the so-called corn or wheat belts? Both hogs and poultry thrive and fatten on alfalfa, and when a ration of the grain of any of the non-saccharine sorghums is fed, the results are not to be exceeded elsewhere.

Under irrigation, which is so generally practiced in the upper Arkansas Valley, some very satisfactory results are obtained. The writer recently had the pleasure of visiting the finest orchard he ever saw, which is located in the second county east from the Colorado line. Potatoes and garden truck generally prove sure crops and of good quality. The great seed dealers have found this region the best for the growth of certain seeds; and this industry is rapidly gaining prominence, and is bringing considerable cold cash into the country each season.

A peculiarity of this region lies in the fact that throughout this great valley water in unlimited quantities can be found at a depth which nowhere exceeds ten or twelve feet below the surface. By the aid of wind and other power, any quantity of water for irrigation purposes may be pumped at a very small cost; and the other advantages of this section are so many that one wonders that it has not many times the present population.

ACCURACY.

BY J. B. S. NORTON, '95.

THERE are two ways to do things; a right way and a wrong way. But is there no middle ground? Are not some things done well enough that are not done absolutely right?

It is not the wrong things that cause the greatest trouble, but those that are done "well enough." We all know people who have failed because their work was done in this inaccurate way. What becomes of the students who study just enough to get a passing grade? Here is a corn field full of weeds, but still it will make a crop. There is the orchard which bears a fair crop, yet with a little care would produce much more. You will probably find their owner poor, just because he is working on this "well-enough" plan. Why are so many so-called scientific experiments utterly worthless? Simply because they were conducted in a slack manner, while the prime consideration should have been accuracy. No, it is easy to see that the well-enough idea will not work.

My first instructor in agriculture used to tell me there was only one right way to do things; and although he did not always follow his own advice, nor did I always do his work in that one way, there is, I believe, a great deal of truth in the statement. The way to success lies in doing everything right. Not only the great things, but the minute details. In the story the boy who does right is the one that gets the situation. You will find it much the same in real life. One may be ever so popular with those around him, a dashing good fellow and all that, but when it comes to business, the boy who honestly does the best he can, although he may not know all the tricks of trade, and how to get as much money as possible out of his patrons, is the one who gets the place.

It is not easy to do right. Not at all. It takes time. Darwin's experiments were the work of his life. It takes constant application. "Things done by halves are never done right." It takes determination. "Where there's a will there's a way." And he who wills to do right will have his reward.

COLLEGE ORGANIZATIONS.

February 23rd.

The Alpha Beta's special program for Washington's Birthday was carefully prepared and highly appreciated. The attendance was so large that chairs had to be brought from the corridors. The patriotic old anthem "Freedom's Banner," sung as a chorus, opened the exercises. The great patriot who was born in 1732 and died 1799 was the theme of the exercises. Elva Palmer, in an oration, spoke of the mission and memories of Washington. A declamation by Stella Kimball, "Our Hero's Birthday." Grace Secrest read an essay on George Washington's boyhood days. The congenial, honest, commanding leader of the schoolboys was the leader of the nation. A mixed quartet, Jennie Smith and Elva Palmer, M. A. Spalding and R. W. Clothier, sang "O Columbia." The home life of Washington was presented by C. C. Smith. Washington retired early, rose early, spoke poorly, enjoyed fox hunting, loved, and was disappointed, and loved again, all very much the same as other men do. In the discussion, "Resolved, that Washington was a greater general than Napoleon," J. E. Taylor spoke of the many commanding qualities which Washington possessed. He was patient, truthful, unselfish, generous, and fought under serious disadvantages. W. H. Phipps thought Washington would not bear a comparison with Napoleon, and that as a general he was inactive and ungenerous. The discussion was followed by an impersonation from G. W. Fryhofer. W. Harling spoke of the contemporaries of Washington. The next piece was a medley, "National Airs," by the Alpha Beta violin quartet. An illustrated number of the Gleaner was presented by Gertrude Havens. The paper was well written and especially well read. "The Old Woman" was sung by a male quartette, R. W. Clothier, W. Harling, M. Spalding, and G. W. Fryhofer. After extemporaneous speaking and business, Misses Palmer and Grace Secrest sung a trio, "Night."

G. W. F.

February 23rd.

At the usual time, President Turner called the Ionians to order. After the opening song, Mary Lyman led in prayer. At the calling of the roll more than the average number of absences were recorded. The Misses Leicester opened the program with a very pleasing piano duet. Mabel Selby recited "Gone with a handsomer man," in a manner that did justice to the piece, as well as to herself, and brought her audience in sympathy with the spirit of the story. Ida Pape presented the Oracle, having for its motto,

Some men were born for great things,
And some were born for small,
And some, it has not been recorded
Why they were born at all.

The contributions were especially good this week, displaying some of the poetical talent of the Society in both the serious and the comic style. A banjo solo by Mabel Cotton was listened to with pleasure, as was shown by the encore, to which she kindly responded. "Should Society Annuals be Abolished" was the question given for extemporaneous speaking. Ethel Patten and Laura McKeen opened the discussion, and were followed by a number of the members; good points were brought out on both sides of the question, though all expressed themselves as being personally in favor of the annuals. Miriam Swingle's original story entitled, "The Lost Restored," was read by Laura McKeen in Miss Swingle's absence, and was highly appreciated, as it showed careful thought and skill in so connecting the incidents as to make it most interesting. Myrtle Chellis then read a pleasing selection from Goldsmith; and the last on the program was a piano solo by Rena Helder. Under the order of unfinished business, a delinquent dialogue was listened to; and its being out of the natural order made it all the more pleasing, though it was the simple little story of George Washington's hatchet. It was quite in season, and with Hortensia Harman as "teacher" and Eva Staley as "little boy" it was made very amusing, being rendered as only they could render it.

M. A. C.

Febuary 24th.

The Webster Society was called to order at the usual time. Roll-call preceded devotion, which was led by G. C. Wheeler. The marshal being absent, J. M. Dill was appointed to fill the vacancy. After reading of the minutes, C. D. McCauley was called to the chair, when Pres. J. M. Williams, assisted by W. S. Hiestand, presented the affirmative of the question, "Resolved, that the merit system should be extended to all branches of our government offices." G. C. Wheeler and I. G. Haney voiced the opposition. The affirmative said: "To the victors belong the spoils;" offices are given away on a political basis, which would be prevented under the merit system. At present, merit is not considered in the appointment to government offices; wealth and influence are. The merit system would prevent the campaign assessment and the officer's politics would not be bridled by the party in power. This system, by frequent examination, compels officers to attend strictly to business or give place to others more proficient. The question which follows then is, Do we want our offices to be filled with our best men? In reply the negative said,—when a new party is elected to power its principles should be carried out, and this can be done only when the offices are filled with men in harmony with the government. Political parties will appoint good men in order to secure the confidence of the people. When a different course is adopted by the voters, they expect a thorough change. The merit system would deprive a man of his individuality in politics, and long continuance in office would tend to make him careless of his trust. The Society decided by vote in favor of the affirmative. After recess the Society was called to order by the President and the program opened by J. A. Lavett in an original declamation. "Lead Mining in Missouri" was the subject of an interesting essay by W. B. Chase. Owing to "etc.," the music of the evening failed to materialize, although H. C. Rogers, music committee, did his part. An interesting edition of the Reporter was read by I. A. Robertson, following which the Critic gave his customary report. After the usual routine of business, the Society adjourned—when the lights went out—Vice-Pres. J. V. Patten presiding.

F. E. U.

February 24th.

In the absence of the President, the Hamilton Society was called to order by Vice-president Frowe. After a short prayer by G. G. Boardman, the program of the evening was opened with a declamation by R. R. Denny, entitled, "Hard Times: their Causes and Cures." The Society was next entertained with an essay, "An Experience with Balky Horses," by T. M. Holland. The essay was a good representation of how to use a balky horse, and brought back old farm recollections to many of the boys' minds. The Society was unusually fortunate in having two good orations the same evening, one by C. A. Chandler, entitled "Our Educational Debt," the other by W. I. Joss on the newspaper question. The manner in which these orations were composed and delivered made us regret, as never before, that we were not in the Oratorical Contest, as the honors would surely be ours. The question, "Resolved, that public sentiment has more influence than law," was argued on the affirmative by H. Moore and V. Maelzer, and on the negative by J. Poole and Strahl. The affirmative argued that it was public sentiment that made the laws, and makes respectable citizens of men. Were it not for public sentiment, they would become demoralized. It was public sentiment that induced men to go to war and die for their country: there was no law compelling them to go. It was not the law that made President Lincoln issue the Emancipation Proclamation; on the contrary, he knew that public sentiment demanded it. The negative argued that law was more severe and more feared than public sentiment. A man might commit a murder or steal some money and if he had no law to fear he could leave that country and thus avoid public sentiment, but the law is what he fears and in this way it protects and influences the people. To bring the argument closer to home, the public sentiment of this College is in favor of football, oratorical contests, uniforms, etc., but the law laid down by the Faculty has so much more influence than the public sentiment that we do not have these things. The debate was decided in favor of the negative by a small majority. The program was continued farther by G. F. Farley with a select reading, "A Juryman's Story." H. R. Gilbert discussed the question of Secret Societies in a very able manner. C. S. Evans as newsman gave us a choice selection of all the latest news of the country. J. L. McDowell being present, was called upon by the Society to sing us a song, to which call he responded and favored us with a solo, Mr. Jones Jr. at the piano. The song was a favorite of the Idaho Indian boys, and sung in the Indian language, but was well received by the Society. After forty-five minutes of lively extemporaneous speaking, the Society adjourned.

A. P. C.

Take Care of the Stock.

At this season of the year all kinds of domestic animals need more care for their comfort than at any other, and more than careless men are apt to give them. Good shelter and cleanliness pay well for the time demanded. Many farmers who take tolerably good care of their horses and cows neglect the hogs and hens, with the mistaken notion that they can get along without attention.

Just now hogs are paying their feeders quite as well as most other kind of stock, and it is quite likely that they will continue to do so for at least the rest of the year. They should have comfortable and dry quarters, at least a dry bed where they can lie down and keep warm. A little care in giving them bed and cleaning out filth will be well repaid.

The poultry, also, are apt to be neglected with the false notion that they are too small an item to be worthy of attention; but as everybody knows who has noticed them, they will reward careful attention quite as well as any of the larger stock of the farm. Give them dry straw or leaves to scratch in, and throw their grain among it; and keep them close in stormy weather and allow them as free range as possible when the weather is fine. Give a variety of food and clean water and oyster shells, and they will shell out the eggs when they are worth picking up.

No country in the world pays better prices than this for eggs and chickens, and yet we do not raise enough of them to supply the market, but have to depend on Canada.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Gertrude Griffin visited classes Friday morniug.

J. F. Thompson, the College herdsman, has been sick for several days.

The Library has received 112 newly bound volumes from the State Printer.

G. M. Dick drops out of College this week on account of failing health.

Ill health compels Rose Hardy, First-year, to drop out of College for the winter term.

J. B. Kimball, First-year, was kept from classes the first of the week by an attack of tonsilitis.

Mr. and Mrs. Harling were in the chapel audience yesterday afternoon. Their son Walter, was one of the speakers.

J. M. Williams, Fourth-year, has dropped out of classes to assume the management of his father's farm in Osage Co.

Bound volumes of the INDUSTRIALIST for 1892-3 and Experiment Station Reports for the same year are just received from the State Printer.

Capt. Cavenaugh has rented Maj. Adams' residence property, corner Juliette Avenue and Houston Street, and will gain possession next week, when he will be joined by Mrs. Cavenaugh, who is yet at Fort Supply, I. T.

In the three and a half years detail as Professor of Military Science and Tactics at this College, Capt. Bolton has made many friends who regret his resignation and departure. The family, too, will be missed by a host of friends.

While skating on the Blue River, last Saturday, W. H. Painter, Third-year, dropped through the ice into water up to his arms. His presence, however, at all the classes during the past week, with his usual smiling countenance, shows plainly how trivial such an experience is to him.

Hon. Martin Mohler, ex-Secretary of the State Board of Agriculture, will address the farmers of Riley County at Manhattan, Friday, March 8th, on the necessity of permanent farmers' institutes and the great good to be accomplished by their aid. Every farmer who can should attend this meeting.

J. W. Evans of the Class of '94, entertained his classmates at his home, Friday evening, February 23rd. At half past eight the merry students arrived, ready for the pleasant evening that followed. Games and conversation were interspersed with music, consisting of a vocal solo by Miss Lyman, organ and violin duet by Miss Clemens and J. C. Christensen, vocal solo by Miss Helder, and an organ solo by Miss Turner. After this, refreshments were served in a neat manner. The hours passed swiftly, and the guests went away pronouncing their guest a first rate entertainer.

The Junction City *Union*, wide-awake to its readers' interests, makes this announcement: "Among the new features of the *Union* next week will be the first of the synopsis of the lectures recently given to the farmers by the Professors of the State Agricultural College and successful farmers in different parts of the State. They will be condensed to from three hundred to six hundred words. There were something like thirty-six lectures, and we will give the cream of the more important. No other paper in the State will do this. There is nothing too rich and juicy for the farmers of Geary."

The Chapel exercises Friday afternoon consisted of the Second Divison of the Fourth years. The following program was rendered by the several members of the Class: "The Corner Stone of our Civilization," E. L. Frowe; "Bars," Fannie Cress; "Luck," J. W. Evans; "From Cave to Mansion," Lillie Dial; "The Great Works of a Young Scientist," G. W. Forsythe; "A Chronic Problem," Blanche Hayes; "Man and Animal," W. Harling; "The Independent in Politics," H. G. Pope. The exercises opened with a piano duet by Misses Helder and Lyman and closed with a piano solo, "The Fountain," by Miss Turner.

Capt. H. G. Cavenaugh, who this week relieves Capt. Bolton as Professor of Military Science and Tactics, has served longer in the army than any of his predecessors. He was Corporal and Sergeant, Company I, First Delaware Infantry from 1861 to 1864. On the close of the war he was made First Lieutenant of the First Delaware Veteran Infantry, and in December of the same year was promoted to Captain. He was honorably mustered out in July, 1865. In the year following he entered permanent establishment as Second Lieutenant of the Thirty-Seventh Infantry, where he remained until 1869, when he was transferred to the Fifth Infantry, and in the year following was assigned to his present regiment, the Thirteenth Infantry, of which he was made First Lieutenant in 1871, and Captain in 1884. Capt. Cavenaugh is in full sympathy with the College and its objects, and will bring to it and particularly the Military Department a ripe experience which must be helpful to the cause of education.

GRADUATES AND FORMER STUDENTS.

Grace Zeigler, student 1891-2, attended chapel exercises Friday afternoon.

Lena Krudop, Second-year in 1888, attended the morning exercises, Monday.

Grant Dewey '90, and Miss Mae Brooks were married at Ames, Kansas, March 1st.

J. E. Dorman, Second-year in 1891, is now taking the Dairy Course at Cornell University.

H. C. Rushmore, '79, writes from Arkansas City of his continued interest in his Alma Mater.

Clayton Hunter, Third-year in 1891-2, was present at the Chapel exercises Friday afternoon.

C. W. Helder, Third-year in 1888-9, has returned to Chicago to resume his work as draftsman for Harris and Co.

Theo. Ekblad, student in 1888, graduates this year from the classical course of Augustana College, Rock Island, Ill.

Effie Gilstrap, '92, writes from Oakland, California, of a pleasant visit, and intended reportal work for the Kansas City *Times*.

Mrs. Ione Dewey-Earl, '93, of Denver, is visiting home folks, after attending the Dewey-Brooks wedding at Ames, Kansas.

Geo. L. Meryman, of Louisville, in company with Geo. Morrison of College Hill, Third-year in 1891, visited College on Friday.

A stray number of the Stillwater (Oklahoma) *Gazette* shows that the Kansas State Agricultural College was well represented at the last session of the Payne County Teachers' Association. Prof. W. W. Hutto '91, was President of the Association. Prof. F. A. Waugh, '91, read a paper, while Mrs. Alice Vail-Waugh, '92, and Mrs. Maude Parker-Hutto, Third-year in 1892-3, furnished the music.

Notes from the College Farm.

At present the prospect of a wheat crop on the College Farm is very promising. The ground is mellow, moist, and not wet enough to hurt by late freezing. The plants show no signs of winter-killing and have already started to grow. Although last fall was a little unfavorable for wheat seeding, the early plowing and frequent harrowing put the ground in a fair condition, and the crop went into the winter with a fair growth and a good stand.

All experience goes to show that early seeding of oats gives the largest yields and makes the surest crop. Last year's oat experiments illustrate this as follows. Nine seedings were made, one week apart, commencing with March 8th, and ending with May 3rd. There was a gradation downward from the first seeding to the last. There was a difference of 6.5 bushels between the first and third seeding; 7.5 bushels between the third and fifth; 6.75 bushels between the fifth and seventh; 12.38 bushels between the seventh and ninth seeding. The experiment is to be repeated again this spring, and the seeding commenced on March 1st, one week earlier than last year. The regular seeding of oats will commence in about a week. The ground was all plowed in the fall and is in good condition for seeding. It is the practice on the College Farm to fall-plow for oats whenever possible.

A small sample of peanuts sent to the Station for trial last spring have proved to be prolific yielders. The variety is a small early sort. Planted in hills two feet apart, with the plants eighteen inches apart in the row, a small patch 13x22 feet produced 25 pounds. This is about 38 hundred pounds to the acre. The patch was on a very good soil next to a ravine. If such a yield can be depended upon there is no reason why they cannot be used economically in stock rations.

M. C. Findley, Second-year in 1892-3, will be teamster on the College Farm the coming summer.

F. C. BURTIS.

The Weather for February.

Temperature.— The mean temperature for February, 1894, was 25.38°, which is 5.01° below normal. There have been only six colder Februaries in the past thirty-seven years. The extremes were 21.50°, in 1879, and 40.37°, in 1882. The maximum temperature was 67°, on the 7th; the minimum, —11° on the 15th—a monthly range of 78°. The warmest day was the 26th, with a mean of 43°. The coldest day was the 12th, with a mean of 3.5°. The greatest range for one day was 43°, on the 7th; the least, 1°, on the 11th. The mean of the observations at 7 A. M. was 17.75°; at 2 P. M., 36.00°; at 9 P. M., 23.89°. Mean of the maximums was 38.75°; the mean of the minimums, 13.68°; the means of the two being 26.21°. The mean for the first ten days was 30.40; for the next ten days, 17.58°, and for the last eight days, 28.88°.

Barometer.—The mean pressure for the month was 29.061 inches, which is 0.23 inch above normal. The maximum was 29.582 inches, at 9 P.M. on the 22nd; the minimum, 28.215 inches, at 7 P.M. on the 9th — a monthly range 1.367 inches.

Precipitation.—The total precipitation was 1.10 inches, which is normal. The light showers on the 7th-8th amounted to 0.1 inch, and the snowfall on the 11th-12th was 10 inches.

Cloudiness.—There were four days entirely cloudy, four ten-thirds cloudy, one one-half cloudy, six one-third cloudy, one one-sixth cloudy, and twelve clear. The cloudiness for the month was 33, which is 12 below normal.

Winds.—The wind was from the southwest thirty-two times, north seventeen times, northwest thirteen times, northeast eleven times, south ten times, east four times, west twice, southeast once, and a calm four times.

The total run of wind was 7880 miles, giving a mean daily velocity of 281.43 miles and a mean hourly velocity of 11.73 miles. The maximum daily velocity was 768 miles, on the 16th; the minimum daily velocity, 56 miles, on the 13th. The maximum hourly velocity was 45 miles, from 2 to 3 A. M. on the 17th.

Auroræ.— There was a brilliant aurora from 9 to 10 P. M. on the 22nd, and one of less brilliancy at about the same time on the 23d.

February.	*Number of rains.*	*Rain in inches.*	*Prevailing Wind.*	*Mean Temperature.*	*Maximum Temperature.*	*Minimum Temperature.*	*Mean Barometer.*	*Maximum Barometer.*	*Minimum Barometer.*
1858	7	.46	.....	25.49	71	-1	.....	.....	.....
1859	2	.61	N	32.25	63	-5	.....	.....	.....
1860	4	1.84	SW	33.74	64	-6	.....	.....	.....
1861	0	.00	NW	33.71	68	-9	.....	.....	.....
1862	1	.12	NW	24.54	54	0	.....	.....	.....
1863	7	2.70	N	29.72	53	-4	.....	.....	.....
1864	....	1.10	NW	38.20	.....	....	.....	.....	.....
1865	4	2.41	NW	34.68	58	13	.....	.....	.....
1866	.....	.....	.....	.....	.....	.....	.....	.....	.....
1867	3	2.01	N	31.70	57	-2	.....	.....	.....
1868	3	.18	NW	29.39	69	-6	.....	.....	.....
1869	5	1.17	NW	30 27	65	-4	28.74	29.25	28.30
1870	0	.00	NW	33 68	69	-3	28.69	29.10	28.10
1871	6	2.48	SW	35.86	71	3	.....	.....	.....
1872	4	.48	NW	34.27	68	-10	.....	.....	.....
1873	2	.30	SW	30.50	66	-4	.....	.....	.....
1874	4	1.05	SW	25.27	48	2	28.78	29.24	28.10
1875	4	.87	SW	22.50	63	-10	28.78	29.40	28.14
1876	2	.65	SW	36.96	69	-4	28.81	29.32	28.26
1877	5	.91	SW	39 59	65	16	29.01	29.40	28.40
1878	5	1.44	SW	39.10	68	6	28.65	29.13	28.23
1879	2	.75	SW	21.50	58	-14	28.84	29.42	28.29
1880	1	.05	SW	36.78	67	4	28.59	29.09	28.02
1881	3	2.75	SW	22.55	47	-13	28.63	28.98	28.23
1882	2	.42	SW	40.37	69	7	28.65	28.96	28.14
1883	4	1.75	NW	25.76	65	-17	28.88	29.46	28.09
1884	3	.58	SW	26.01	63	-6	28.76	29.12	27.97
1885	5	.55	SW	21.57	60	-18	28.58	28 96	28.06
1886	4	.35	SW	31.42	69	-7	28.94	29.48	28.08
1887	6	1.18	NE	27.84	72	-9	28 98	29 59	27.90
1888	2	2.67	N	32.12	71	-4	29 05	29.75	28.44
1889	3	.54	N	25 53	64	-10	29.15	29.80	28.47
1890	5	.24	N	29.97	70	-5	28.95	29.48	28.44
1891	2	.84	N	27.56	68	0	28 88	29 41	28.16
1892	5	2.95	SW	34.61	64	12	28.91	29.25	28 23
1893	6	.89	N	26.69	61	-6	28.95	29.69	28.31
1894	2	1.10	SW	25.38	67	-11	29 06	29.58	28.22
Means	3.5	1 09	SW	30.39	64	-4	28.83	29.35	28.20

WIND RECORD.

February.	*Total Miles.*	*Mean Daily.*	*Maximum Daily.*	*Minimum Daily.*	*Mean Hourly.*	*Maximum Hourly.*
1889	4861	173.62	348	40	7.23	28
1890	5812	207.57	374	74	8.65	28
1891	7675	274.11	541	80	11.42	34
1892	7024	242.22	407	101	10.09	30
1893	7747	276.68	494	99	11·53	33
1894	7880	281.43	768	56	11.73	45
Means	6833	242.61	489	75	10.11	33

E. R. NICHOLS, Observer.

List of Periodicals in the College Library, mostly Bound.

a. Literary and General.

Agora, complete, except No. 2.
Andover Review, Vols. 5 and 6.
Arena, complete to date.
Atlantic Monthly, complete to date, 72 Vols.
Belford's Magazine, Vols. 1, 2, 3 and 4.
Blackwood's Magazine, Vols. 1 to 81 inclusive.
Century Magazine, complete to date, 24 Vols.
Christian Examiner, about 90 Vols.
Cosmopolitan, set complete, except No. 1 of Vol. I., Nos. 2 and 4 of Vol. III., No. 4 of Vol. V. and No. 4 of Vol. XV.
Critic, N. Y.—New series complete to date, 20 Vols.
Education, complete, to date, 13 Volumes.
Edinburgh Review, complete to date, 177 Vols. and indexes.
Electic Magazine, complete to date, except 3 numbers, 119 Volumes.
Foreign Quarterly Review. Several Volumes.
Forum, complete to date, 15 Volumes.
Galaxy, complete, 24 Volumes.
Harper's Magazine, complete to date, 87 Volumes.
Harper's Weekly, 1884, to date.
Journal of the American Oriental Society, Vols. 2, 3, 4 and 5.
Kansas Magazine, complete, 4 Volumes.
Library Journal, Vols. 6, 7, 14, 15, 16, 17, to date.
Literary News, 1889 to date.
Literary World, Boston, Vols. 3—16, to date.
Littell's Living Age, 16 Volumes.
London Quarterly Review, Vols. 1—118 inclusive.
Magazine of American History, Vol. 2, to date, 29 Volumes.
Massachusetts Magazine, 1789, 1790 and 1791.
Nation, complete, except 5 or 6 Nos. to date.
New Princeton Review, Vols. 1—6.
New York Review, Vols. 4, 5, 6, 8 and 10.
Nineteenth Century, Volumes 1, 2 and 3.
North American Review, complete to date, 157 Volumes, except 3 Nos.
Notes and Queries, 1849 to 1855, 12 Vols. and index.
Pennsylvania Magazine of Biography and History, 14 Vols.
Public Opinion, Vols. 1, 3, 4, 5, 6, 7 and 8.
Scribner's Monthly, old series, complete 22 Vols. and index.
Scribner's Magazine, complete to date, 14 Volumes.
Westminster Review, several odd Volumes.

b. Agricultural and Horticultural.

Agricultural Gazette. First series combined with Gardener's Chronicle and a few later Vols.
Agricultural Gazette of New South Wales, complete to date, 4 Volumes.
Agricultural Science, complete to date.
American Agriculturist, complete except Vols. 9, 10, 11, 12, 13, 14, 29 and 31.
American Bee Journal, Vols. 27—30.
American Florist, all except Vols. 6 and 7.
American Garden, all except Vols. 1 to 7.
Annals of Agriculture, Arthur Young, Vols. 1 to 40.
Breeder's Gazette, Vol. 2 to date except a few Nos.
Clark's Horse Review. A few Vols.
Cultivator and Country Gentleman, Vol. 36 to date, also 27, 28, 29, and 30.

(To be continued next week.)

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The Topeka city library now has a debt of about $14,000. The rents from library hall pay the interest on this debt.

The expenses of the Topeka schools for January were about $9,000, and of this amount $7,400 was for teachers' salaries.

The Eldorado *Educational Advance* says: "If we do not get a County High School right away, the institution is not very far off."

The Treasurer of the Parsons Board of Education will have $5,000 surplus on hand at the end of the present term of school.

Prof. C. J. Christy, formerly of Garfield University, Wichita, had the pleasure, last week, of reading eulogies delivered in honor of his supposed departed self.

Chancellor J. H. Canfield of the Nebraska State University, formerly of the University of Kansas, has been elected president of the Nebraska Teachers' Association.

The Emporia *Republican* reports that the mumps have played havoc with the students of the city and Normal School this last week. The whole town seemed to be suffering with the epidemic.

The *Student Journal* says that "The report that fifty students had been dismissed from the State University on account of failure to pass examinations has been found, on inquiry, to be untrue. Only fifteen have had to be dismissed, this being the smallest number of dismissals for several years. Of these, two are in the football team and three in the Glee Clubs. But this can in no way indicate the standing or scholarship as a whole of the remaining members of the club. The average standing of the members of the Glee Club is 80 per cent, which is in either case a higher average grade of scholarship than can be found in any other organization or class of equal numbers in the University."

Every year a stream of young men and young women goes out of our colleges into the great world, and it is important that the training of these so far as possible include the whole range of practical living. It is to be lamented, however, that many of our youth, instead of coming out of our schools with a practical education — a common sense view of life — are, on the contrary, decidedly unpractical. They seem tobe educated away from the practical and live only in the realm of speculation. They do not add to the social weal. We are living in a practical age, and the thought product of the great centers of learning, by which society is moulded must not be an uncertain factor, but bear so far as possible upon matters of practical interest and daily life.—*College Oracle.*

The State University *Journal* admits that "the reaction against giving undue attention to athletics in colleges to have fairly begun." It adds: "Universities are becoming the training schools for too many professional athletes. In papers describing the training of members of football teams last fall, the reader was informed that all time and thought were given to the game, recitations and study being only incidental. With other games it is the same way, the Yale baseball club taking its southern tour in the spring just as any professional club does, and boating crews are already at work and will be devoting their time and their best energy to the work until July. Probably it was necessary to give athletics undue prominence for a time, in order to impress upon students the importance of physical training. This object accomplished, it is just as necessary now to confine athletic training to its proper place in Universities."

With regard to the charge of plagiarizing made against the winning orator at the State Oratorical Contest by a correspondent of the Topeka *Capital*, the Kansas City *Star* remarks: "Another Kansas student —J. W. Wetzel of Winfield College—has been accused of plagiarizing the oration which won the first prize. This is the third instance of "unconscious assimilation" which has been reported in Kansas within the last few years, and it ought to be the last. In that State particularly such an offence admits of no justification. There is no excuse for any Kansas boy or girl who steals a speech. The gift of oratory is indigeneous there. There are more interesting things to talk about in that State in than any other. There is a certain originality of thought and character there that is found nowhere else. In the youthful and ambitious Ciceros of Kansas who aspire to those honors which are meted out at college contests would limit themselves to subjects with which they are familiar and would select those which touch their own experiences and are suggested by their personal observations, their efforts would be tenfold more interesting and instructive than would be possible in the case of any oration modeled after the more finished and pretentious style of celebrated speakers and writers."

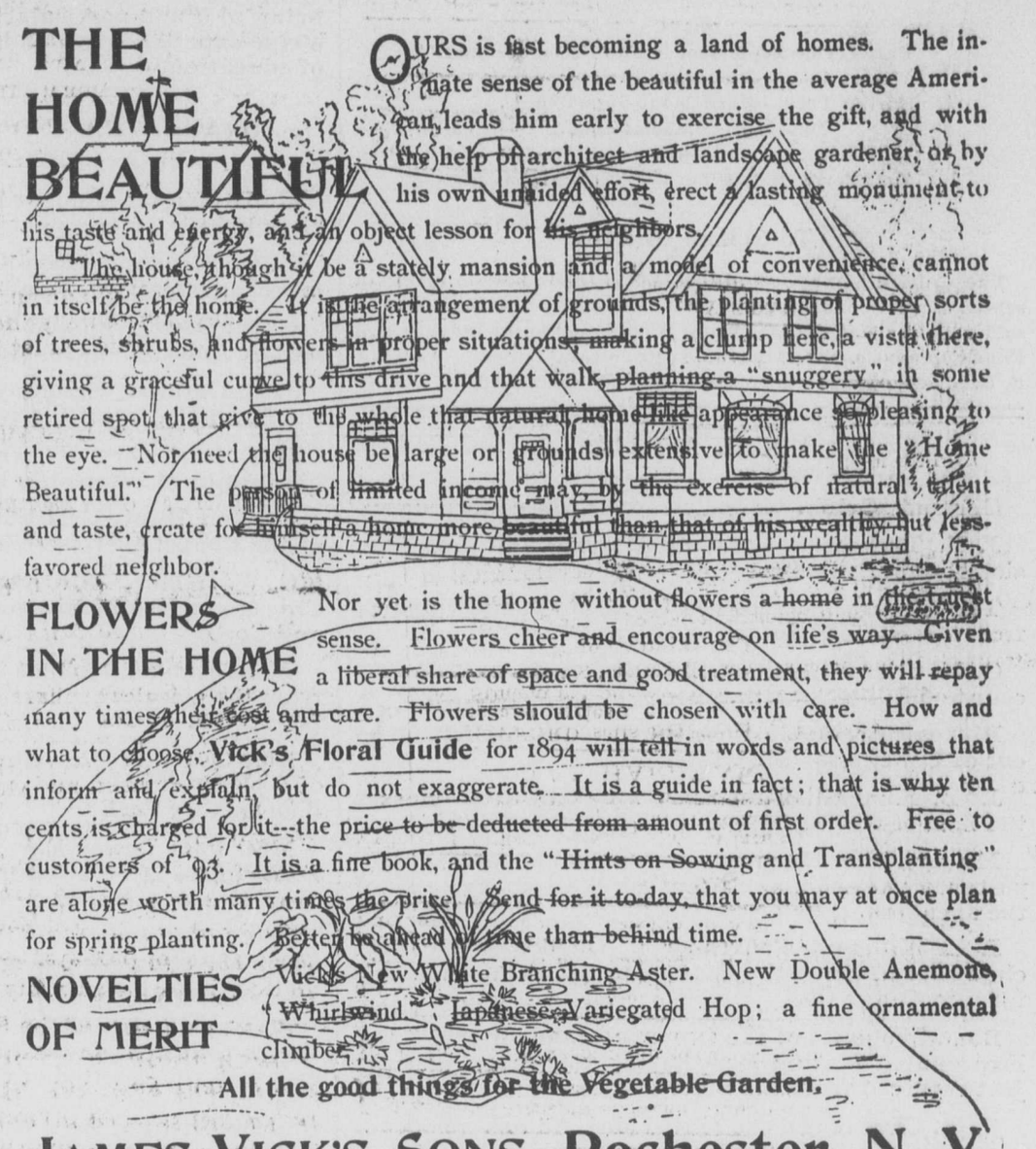
Judging from the press reports, it seems that the State Oratorical Contest between the leading literary colleges held at Topeka on the evening of February 22rd, was a disgraceful affair. It began with disorder and ended in a fight on the stage between the students of the contesting institutions and the arrest of a number of hoodlums by a squad of the Topeka police force. The Judges declared student John Wesley Wetzel, of Winfield College, the winning orator, with C. T. Courtney, of the State Normal School, as second, and L. B. Sears, of the State University, as third. The orations were well delivered, but the Topeka *Capital* in its next issue declared the winning oration, or rather the whole batch of orations, with one possible exception, as largely plagiarized in tone, spirit, plan, trend, ideas, and in many instances in expression, and adds: "It is time the college professors awakened up and made literary theft impossible, at least in the public State exhibitions of 'original' orations. These orations were in print, and were submitted to the teachers of English literature of each institution. They ought to have known whether they were genuine or stolen. It is not essential that the ideas taken from other writers be given in the exact language, to make it plagiarism. The transposition of language, the use of similar but not the exact words is plainly plagiarism if the idea is the same, and the same similes are used. It will astonish the readers of the *Capital* to find by reading the specials that students and professors unite to shield, excuse, and apologize for the plain and distinct plagiarism of Mr. Wetzel. He was easily the strongest and most finished orator in style and elocution, but he appeared before an immense crowd to deliver an original oration, and whether it was original or taken from other authors is of more importance to him, and to the public, than his voice, gestures, enunciation, and inflection. The higher importance of honesty in this whole matter seems to be lost sight of in the effort of the various colleges to sustain their institutions against this charge. It would be a disgrace to send any student from Kansas to an interstate contest with an oration that was not genuine in what it claimed to be in scope and style and ideas. If the State Oratorical Association has not the courage to stop the plagiaristic habit which has been a scandal for the past two years, it ought to go out of business at once."

The Formative Period in Life.

The tastes of childhood are usually those of after life; hence the great necessity of having these rightly guided and strengthened in the formative period. If a child shows any desire to become the owner, or even the guardian of a plant or flower, the same should at once be transferred to its custody. It should be carefully instructed in its management, and encouraged to give it every attention. It is impossible to say what may grow out of beginning so small, and which, to the casual observer, may appear trivial. In the same way as soon as a child is old enough to make a pet of an animal, it should be given one to take charge of, if possible, whether it be bird, cat, lamb, or calf. It should be taught to treat the pet at all times with humanity. In this way that innate love of animals which sometimes manifests itself so early must become a passion which will lead to that careful study which is the pretty certain harbinger of success. Tastes, such as those referred to, should not be treated with neglect. They are of far more consequence than many of us are inclined to imagine. Young lads who have been the successful owners of a pet lamb or a pet chicken are pretty sure to possess that love for the farm which, when they grow up, will moor them to it. Let us give heed, then, to the desires of the young folks; and when of the character indicated, let us gratify them if we can. The desire for ownership is rational, and when gratified it always increases the interest of the child, as well as of the man.

Less Free Seed Abuse.

Secretary of Agriculture Morton has made himself unpopular in some quarters on account of too freely expressed opinions. He is determined also to make enemies in another direction as well, but in this he should have the hearty support of all tax-payers and honest-minded persons. The people he is going to incense this time are those who write "M. C." after their names, and who have been in the habit of securing the good will of many of their constituents by sending them annually bundles of seeds at the Government's expense. Secretary Morton intends to shut down on this form of Government "pap," and hereafter to send the seeds of new varieties only for testing. The abuse of the Seed Division of the Department of Agriculture at Washington has been most flagrant, and although universally recognized as such, no one in authority has had the courage to put a stop to it. That Secretary Morton may accomplish this result is the wish of this paper.—*Orange Judd Farmer.*



THE HOME BEAUTIFUL

OURS is fast becoming a land of homes. The innate sense of the beautiful in the average American leads him early to exercise the gift, and with the help of architect and landscape gardener, or by his own unaided effort, erect a lasting monument to his taste and energy, and an object lesson for his neighbors.

The house, though it be a stately mansion and a model of convenience, cannot in itself be the home. It is the arrangement of grounds, the planting of proper sorts of trees, shrubs, and flowers in proper situations, making a clump here, a vista there, giving a graceful curve to this drive and that walk, planning a "snuggery" in some retired spot, that give to the whole that natural, home like appearance so pleasing to the eye. Nor need the house be large or grounds extensive to make the "Home Beautiful." The person of limited income may, by the exercise of natural talent and taste, create for himself a home more beautiful than that of his wealthy but less favored neighbor.

FLOWERS IN THE HOME

Nor yet is the home without flowers a home in the truest sense. Flowers cheer and encourage on life's way. Given a liberal share of space and good treatment, they will repay many times their cost and care. Flowers should be chosen with care. How and what to choose. **Vick's Floral Guide** for 1894 will tell in words and pictures that inform and explain, but do not exaggerate. It is a guide in fact; that is why ten cents is charged for it—the price to be deducted from amount of first order. Free to customers of '93. It is a fine book, and the "Hints on Sowing and Transplanting" are alone worth many times the price. Send for it to-day, that you may at once plan for spring planting. Better be ahead of time than behind time.

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THE INDUSTRIALIST.

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General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

WOMEN IN FARMERS' INSTITUTES.

BY MRS. NELLIE S. KEDZIE.

WE hear much about the very great good which results from the gathering of farmers in various meetings, especially in Farmers' Institutes. We know how the interchange of ideas—the experiences either for success or for failure, the method used for raising some particular crop on upland or bottom—not only helps that man who tells his story, by making him exact in his statements, but helps his neighbors by giving them definite knowledge as to his work, while they, knowing by observation just the amount of success he has achieved, know how much faith to put in his story and whether to follow his advice or not.

A Farmers' Institute is supposed to be for the farmer's whole family; and to no one in the house should it come with more help and cheer than to the farmer's wife and daughters. One of the reasons why women grow old and die before their time on the farm; one of the reasons why women from the country, in spite of the fresh air and wholesome food, fill the larger part of our insane asylums, is because they stay at home too much. They do not get out enough to have thoughts outside their immediate tasks. Some one has said, "When one's thoughts become narrow enough, we call him crazy and shut him up." Bounded by the four walls of a Kansas kitchen, what wonder we find many women from Kansas farm homes in our "hopeless wards!"

The Farmers' Institute is a place to help the farm women into wider thought. It is the place where the women should learn to tell their own experiences, and to listen to their neighbors' experiences. It is the place where every woman should hear something that will make her home brighter and better. One reason why the young people of the farm look with longing eyes toward the town is because the farm home is not what it should be; and all the helps the women can get out of the Institute will go toward the betterment of the home.

The women of the farm usually know most about the butter, the chickens, the vegetable garden, if there be one, and the experiences each one can give will help everyone of her neighbors; for two heads are always better than one.

Nearly every woman in a neighborhood has some specialty. One makes better bread than any one else, another raises the finest turkeys, a third grows the most thrifty houseplants, and still another dresses her children in the prettiest manner. Now if each woman will write out her method of doing this work which she does better than any one else in her community, read it to the assembled women, and be ready to answer any questions that may be asked, she will help the whole Institute; and every woman can do something to help in this matter.

There was a time when the woman who learned to do good work in any line gained her knowledge by the hardest kind of personal experience. That day has gone by. We have helps in every kind of work for all classes of workers, and one of the duties laid upon each member of a community is to be as helpful as possible in every direction. "No one liveth to himself alone," and whoever can do the best piece of work owes it to her neighbors to tell them how she does it that they may improve upon their own methods.

The better every task is performed in any community, the better people will there be, and the higher will be the standard of citizenship. There is always plenty of room for good work in the world.

The cheery woman who is ready to tell her neighbor all she can about her best piece of work, who can learn from every neighbor she has some helpful lesson, is the woman who not only makes an Institute full of life and pleasure, but who carries away something to put into her home that will help it to be more attractive to every one who comes through its door. After all, that is what women want more than anything else,—help and guidance to make their homes what they should be,—and the Institute is one of the best of places for women to get that very help from each other. Institutes without the voices of women are like homes made by men alone. They can be, perhaps, but we don't any of us want that kind! When the Farmers' Institute is recognized by the farmer's wife as belonging to her in as great a degree as it belongs to anyone else, then will it accomplish its full purpose; for it will not only reach out to help on the farms, but it will have an influence upon the homes which will make them grow better year by year. The women of Kansas are needed in the Institutes; and as they come in and help in this work they will find themselves strengthened, brightened, and cheered. Farmers' Institutes are for the whole of the farmer's family.

THE OBJECT OF A COURSE OF STUDY.

BY PROF. J. T. WILLARD.

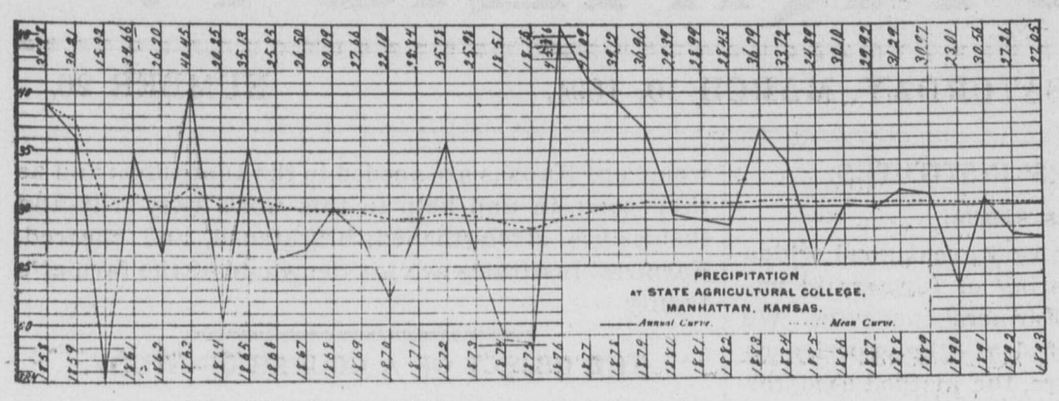
PROBABLY many students, if asked to tell why they are in College, would be unable to assign reasons therefor other than what might be embodied in the vague expression, "To get an education." Many parents might be unable to say much more in support of their intention to send their children to a college. Everyone appreciates the necessity of being able to read, write, and cipher, but when a college education is under discussion, the opinions in regard to its proper scope and its effects are likely to be as numerous as the disputants. It is worth while for every student, parent, and teacher to thoughtfully consider these questions, and to decide, to his own satisfaction, at least, why a college education is desirable, if it is, and toward what end student and teacher should unitedly strive.

Many students are in college only because they are sent there. Their conduct shows that they have no appreciation of the opportunities and responsibilities of a favored youth. Only with the lapse of years will they awake to a partial realization of their foolish neglect. They will never more than partially realize their loss, for it is one of nature's compensations that only the educated can fully appreciate the value of education. The man with no education knows as little of the pleasures of knowledge as a blind man does of the beauty of light.

Of those students who can assign a reason for obtaining an education, probably the majority would say that they desire to better their lot, to acquire an instrument by which they can live in comfort or luxury with less hard work than would be necessary otherwise. This is a tangible reason, if not of the highest order. Unquestionably, in most walks of life, an education is a distinct advantage in the struggle for existence, and parents should not be slow to realize that if their children are to have as good a chance as they had in the world, an education only equal to their own is not sufficient, since the general level of education is much higher than it was a generation ago. However, an education obtained only as a stepping-stone to ease or wealth will be very likely to disappoint one in this respect. People of good and even superior education are now so abundant that positions of trust, honor, and emolument are easily filled from waiting multitudes. But even in the less prominent walks of life one's education will always be of some, and frequently of very great, advantage.

In the view of the writer, the usefulness of a college education must be granted by an appeal to higher motives than the pecuniary. An education is incomplete which does not include these things: (1) Preparation for citizenship, with which is intimately connected (2) preparation for one in his immediate relations to his fellows, and (3) preparation which will enable him to get the most and highest enjoyment possible in life. The education of hermits might be very different from that of people associated as they are with others in families, communities, and states. The privileges of citizenship demand in return certain duties, and these cannot be independently performed without education along these lines. The education may not necessarily come from a college course; it may be gained by experience and private study, but there is no one who will not be better able to judge correctly in regard to the wisdom of a proposed action, with a college education than he would be without it. History, sociology, political economy, and that most imoprtant of all studies, practical logic, are all required in forming judgments upon the every-day questions of society and politics. The masses of mankind, by the conditions into which they were born or have drifted, are unable to study and analyze complex political problems; they must of necessity be followers of leaders. This gives to the man of knowledge a power which carries with it a corresponding duty to make his influence felt upon the side of justice and humanity. One of the greatest benefits of higher institutions of learning should come from the influence of their students and graduates upon their less fortunate fellows.

Great as is the benefit of education to one in respect to his relations to others, its greatest function is to fit him for enjoyment of life. At its best, to the



great majority, life is full of trial, turmoil, vexation, and disappointment, brightened by occasional success and an ever-present hope of better things in the future. But the educated man or woman finds within a constant source of pleasure. The ability to observe and understand the things of nature with which one is ever surrounded brings pleasure of the purest kind. As intimated above, the pleasures of knowledge are known only to those who possess it. But to the rightly educated, the starry sky, the earth with its myriad forms of animal and vegetable life, the sublime and terrible phenomena of nature, such as the earthquake, lightning, and tornado, and the not less mysterious and impressive phenomena of condensation, volatilization, and crystallization, not to mention the more complex physical and chemical manifestations—all these and many more speak to him in that universal and various language of which the poet sings. Nature is his teacher; her children are his congenial companions and faithful friends.

RAINFALL AT THIS COLLEGE.

BY PROF. E. R. NICHOLS.

THERE is probably no other meteorological element that effects crops so much as that of rainfall in a climate like that of Kansas. If one can by any means show that the rainfall is increasing, he is at once welcomed as a bearer of good news. The favorite seven-year grouping seems to have outlived its usefulness, if it ever had any. The means obtained by dividing the rainfall at the College into seven-year periods is shown in the second column of the accompanying table. These means should be alternately wet and dry, the first being wet; and each mean should be wetter than the preceding corresponding mean. The first three periods agree very well with these conditions, but the fourth and fifth seem to have been reversed. Died at the age of twenty-one!

SEVEN-YEAR PERIOD.		SIX-YEAR PERIOD.		ELEVEN-YR. PERIOD.	
Years.	*Means.*	*Years.*	*Means.*	*Years.*	*Means.*
57—63	29.97	58—63	31.97	57—67	29.96
64—70	26.79	64—69	27.58	68—78	30.29
71—77	30.60	70—75	24.90	79—89	31.04
78—84	33.34	76—81	36.90	.....	.....
85—91	28.68	82—87	30.64	.....	.....
.....	.....	88—93	28.36	.....	.....

Dividing the rainfall into periods of six years, the means found in the fourth column of the table are obtained. These may be designated as wet, medium, and dry; wet, medium, and dry, etc.; and each succeeding period is wetter than the preceding corresponding period.

The present rate of increase would require that the next six years give a mean of 40.72 inches, or a mean greater than six of the wettest years past will give. It is possible, but not probable. Died at the age of forty-two!

One other grouping may be given; that of eleven years corresponding to the periods of maximum sun spots. The means obtained from the eleven-year periods will be found in column six of the table. The increase of the second period over the first is one and one-tenth per cent, and the increase of the third period over the second is two and one-half per cent. These apparent increases might easily be brought about by errors in observations, even admitting the grouping a proper one. It is not unlikely that the increased cultivation of the soil, both in quantity and intensity, may cause some slight increase of rainfall. The following is from an article by Prof. Curtis in bulletin number seven, U. S. Department of Agriculture: "The single condition favorable to such an increase of rainfall [in Kansas, Nebraska, etc.] consists in the steadier and larger evaporation which no doubt takes place over the cultivated area, but the other conditions necessary to condense and precipitate this moisture over the same region are largely absent."

The accompanying cut illustrates the annual precipitation at the College for the past thirty-six years. The vertical lines represent years. At the bottom of the lines will be found the year, and at the top the rainfall in inches and hundredths. The horizontal lines represent inches of rainfall, in which the multiples of five are made heavier, and the number of inches placed at the left. The annual precipitation is indicated by the continuous line. It will be noticed that the least rain fell in 1860, and the most in '76. Probably the most noticeable feature is the wide variations from year to year in the first part of the curve, and the much less variations in the last part. The greatest variation from normal in the last fifteen years was 7.21 inches, or nearly twenty-four per cent; in the preceding fifteen years this was exceeded seven times, being nearly fifty-eight per cent variation in one instance.

If this small variation from normal has become permanent, it is worth more than increased rainfall with wide variations from year to year.

The normal, or mean curve, indicated by the dotted line in the diagram, seems to be the best test of whether the rainfall is actually increasing or decreasing. Omitting the first eight years, it will be seen that the normal curve was the highest in 1884, when it was 30.63 inches. Since then there has been nearly a uniform decrease, until now it is 30.06 inches.

THE SOCIAL LIFE OF A FARMER'S DAUGHTER.

BY GRACE A. SECREST, '96.

THERE seems to be a queer idea prevalent among our city sisters. concerning the life of a farmer's daughter. To some, she is simply an unintelligent, uncultured, and unsocial being, created merely to be somebody's work girl. To others, she appears as a coarse, brown-faced maiden, not fit to move in "high society," even though she be intelligent and cultured.

Perhaps in some cases these are correct impressions, but a farmer's daughter, even though she be a maiden with a nut-brown skin, should have every advantage that will bring forth any hidden talent; that will develop within her all that pertains to a noble and perfect womanhood. She cannot properly develop mind or body unless she have social intercourse with her fellow beings in some way, and which is the best way to obtain this, she must decide upon. She may have many ways or one way. She may invite to her home companions who will influence her to strive to lead a useful and unselfish life, and to seek a knowledge of those things that will make life beautiful to her. Her friends should love poetry, though they may never compose a rhyme. If she cannot have such friends, she should find other companionship in books and music.

Her books should be chosen as her friends are chosen. Those books should be read that will broaden and deepen her intellect, make her acquainted with the outside world, and indirectly bring her in contact with people whose ideas may be of great help to her.

She should certainly have her music, for what is home without music? It is to the home almost what sunshine and rain are to the drooping plant.

There she can have her pets, and she surely has her choice from the orphan calf down to the little black dog with yellow spots over his eyes, or the canary bird which fills the house with melody. But the farmer's daughter need never lower her womanly nature by cruelly imprisoning the wild birds, thereby robbing Nature of an important member of her orchestra.

The calf, however, is as close to the barn-yard creation as a farmer's daughter wishes to come. Don't make her milk, but rather let her vent her energy in the flower or vegetable garden where she is brought in closer union with Nature, and what can better fill one with a deeper love for the good and the beautiful than association with the pure children of Nature? The life of a farmer's daughter should not be all work, but a combination of work and pleasure, and such of each as will make her understand there is something noble to live for. Then the whole world will surely be to her a world of sunshine.

SHALL WE STUDY FICTION?

BY JENNIE R. SMITH, '94.

AMONG the most interesting and useful studies in our College course is that of literature—the study which enables us to become acquainted with the men and women who have been among the deepest thinkers, the most influential citizens, and the best loved of their country.

We choose a special line of study because of its value to us in the formation of character; because the interest we have in it will lead us to make deeper investigation than we should in any other line; and the further we pursue our investigation, the firmer the foundation we have laid on which to build.

It is for these reasons that from the whole group of studies many students select literature as the one worthy of their extra time and attention. There are numbers of branches, and of these neither history, philosophy, biography, nor poetry are so extensively sought and so eagerly devoured as fiction. There are reasons why the reading of fiction is beneficial, and just as truly are there reasons why it is injurious.

Without question men and women are never so intensely interested in other subjects as in that of men and women. We want to know what life is to them as compared with our own experience, and how can we better find this out than by studying the pages of fiction?

We may earnestly endeavor to understand ourselves and the friends with whom we associate; but many of us are not endowed with the faculty of analyzing character, and are hence very apt to form unjust estimates. There is a great lesson for such people to learn, and the novelist may become their invaluable teacher; for the novelist deals with character, and after he has helped us we understand it better ourselves.

Nor is this all to be gained. The victory of right over wrong, the noble lives and grand accomplishments pictured there, afford us irresistible inspiration.

Lastly, our lives cannot be all work; there must be a certain amount of play, and novel reading is one of the greatest sources of recreation.

It may also be truly said that such reading harms; for if it destroys the taste for more solid reading, which is for the better development of the thinking powers, it has robbed us of something of great value.

Again, the novel never fails to arouse our sympathies and emotions; but it presents nothing for them to spend themselves upon. So it is urged by some that when we come to cases in actual life that need our sympathy, they do not receive it because our novel-reading has compelled it so repeatedly to act only within ourselves that it refuses to go out.

Nevertheless the benefit to be derived from reading standard novels, and reading them thoroughly, is one which nothing else can supply, and which observation may teach us overbalances injurious results.

FARM NOTES FROM VARIOUS SOURCES.

A considerable part of the losses sustained in feeding animals on the farm come from small leaks that are often overlooked. While the farmer that looks closely after the details will make a success, one that overlooks them will meet with failure.

Nearly every farmer has a boy or a girl who takes naturally to one or another kind of stock. If this is so, the farmer is lucky, and is hereby very heartily congratulated by the editor of this Department of the *Grange Bulletin*. Such a boy or girl should be encouraged. No pains should be spared to give them every chance to gain information by taking papers, by furnishing them with books and opportunities of observation. This will make them intelligent and inspire them with steadfastness.—*American Grange Bulletin.*

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There is one thing about a man who has a trained education that is seldom found in one without it, and better fits him for any business in life which involves thought and study. It is the fact that his mind has been drilled, trained, and accustomed to work out problems by application, by analysis, and by comparison. Too many men engaged in productive enterprises are unable to do this, as is a man who has to build a bridge, construct a legal argument, decide a question of law, manufacture a piece of machinery, or superintend the work of two or three thousand men to profitable advantage. And yet the farmer, to be successful in the ordinary acceptation of the term, needs to be able to do just such methodical thinking as these call for, and to work out and solve problems requiring this knowledge. Many men manage to work their way through the world without this educational drilling; but is it not done much as a stowaway, found on an ocean vessel after it leaves port, does the work assigned him on shipboard? A land-lubber makes a poor sailor until he knows the ropes and both what they are for and how to use them. We should give our youth mental training and drilling, then as men the world will come natural to them.—*Colman's Rural World.*

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Miss Ollie Patterson of Ohio visited College Friday.

Mr. Ludwich, of Parallel, was at the College Tuesday morning.

Mr. and Mrs. Guy Varney were visitors at the College yesterday.

Hetty Coffey was among the visitors at the lecture Friday afternoon.

L. V. Putnam, student, enjoyed a visit from his father on Wednesday.

Miss May Murphey and Mrs. Schaefer attended the lecture Friday afternoon.

Sickness kept Oliver Smith, Second-year, from classes the first of the week.

The Adelphian Quartette from Crete College, Nebraska, visited College, Friday.

Mr. and Miss Correll were called home to the bedside of their mother, Thursday.

The Women's Christian Temperance Union held a parlor meeting last evening at Prof. Olln's.

Miss Kate and Mamie Stingley and Mrs. Lee Stingley attended chapel exercises Friday afternoon.

E. M. Fairchild led in devotional exercises in chapel Thursday morning. He left on Friday for Troy, N. Y.

Misses Phœbe and Sadie McCormick came up from Zeandale to attend the VanBlarcom-Stingley wedding.

Most of the good things in the VanBlarcom-Stingley wedding lunch were prepared by the College Domestic Department.

Mrs. A. F. Waugh, of McPherson, in company of Mrs. R. H. Kimball, looked over the College grounds and buildings, Friday.

Mr. J. J. Davis, editor of the *Mercury*, has been appointed Postmaster in Manhattan, and will take charge of the office about April 1st.

Mrs. Winchip spends the day in Topeka inspecting new styles in women's wear that she may give hints to the young ladies of the coming graduating class.

Sarah Evans of Riley, in company of Lucy Waters, Fourth-year, visited classes Wednesday. She hopes to resume studies at the College in the spring.

Professors Popenoe and Georgeson represent the College in a Farmers' Institute at Iola, this week, and Professors Failyer and Mayo take part in a second Institute at Russell.

Rev. R. S. Finley, of Lennox, on his way to the Methodist conference, stopped over in Manhattan during the early part of the week to visit his cousin, F. E. Finley, student, and to look over the College.

W. H. Phipps, Third-year, was called to Kansas City on Saturday by a telegram announcing the serious illness of his sister, but whose condition was so improved by Monday that he returned next day to College.

The stone work on Science Hall is almost completed and a good part of the roof is on. The building is the admiration of every one, and even in its unfinished condition gives promise of the beautiful architecture which will easily give it first place among College buildings.

The Garden City *Imprint* of February 24th has the following: "Hon. Harrison Kelley, a Regent of the State Agricultural College, arrived here Thursday to locate the experimental station. After looking the situation over, he decided to locate it on J. M. Dunn's farm on the high lands."

Prof. Jones delivered his lecture on "The Evolution of Student Honor," yesterday afternoon. The gradual upward tendency was shown, and the growth was divided into four periods. First, the era of combat. Brute force was the pride of the student. Every student in school knew just how many boys he could whip. It was honorable to fight. The second is the age of cunning. The strong man was no longer the hero. The crafty, sneaking, cunning fellow had taken his place. It was considered honorable to steal a class-song or other class property, and it was not disgraceful to cheat in examination unless caught at it. It was honorable, simply because a person was a student, to do these things that under other conditions of life would be most disgraceful. But this age of contradistinction soon gave way to the third,—the era of individual responsibility. Education is a business. There is a general feeling that there are not two standards of right—one for the citizen and another for the student. The student is a man among men. To cheat is to place a blot upon his character. Still, this is not a perfect type. The signs of the times point to a fourth,—collective responsibility. The public is looking at us, and holds us all responsible. There are always a few out-laws in college society. It is not right that these few by their acts should disgrace all. There comes, then, a feeling of collective or organic responsibility to preserve the fair name of student honor from disgrace. The old ideal permitted the student to do meaner acts than others; the coming ideal expects nobler acts of him.

GRADUATES AND FORMER STUDENTS.

Nellie McDonald, '91, spent Friday at College.

Ida Walters, First-year last term, visited the College Friday.

Etta Smith, Third-year, is kept from classes by sickness.

E. C. Pfuetze, '90, presents the Museum with a golden eagle.

C. E. Shoup, Second-year in 1892-93, is teaching in Russell County.

E. S. Mudge, Third-year in 1891, is in a surveying corps at Newton.

M. O. Bacheller, Third-year in 1891-92, is attending the State Normal, at Emporia.

A. D. Holmes, Second-year in 1892-93, has a position as clerk in the post-office at Gaylord.

R. A. McIlvaine, '92, is teaching in Shawnee County. His post-office is Seabrook.

Alma Eyster, student last year, visited College Friday in company of Eva Philbrook, Second-year.

H. W. Avery, '91, of Wakefield, attended the Stingley-Van Blarcom wedding in Manhattan on the 8th.

Maud Whitney, Third-year in 1889-90, finds employment as stenographer in the Missouri Pacific depot at Kansas City.

W. S. Arbuthnot, '91, and F. M. Linscott, '91, greeted friends at the College, Friday, being here to attend the meeting of the State Veterinary Association.

Mrs. Ione Dewey-Earl, '93, of Denver, visited College friends yesterday in company of Emma Adams and Alta Lee, former students.

E. C. Thayer, '91, came up this week from his home at Vera, where he is working on the farm. He donates a wood-duck to the Museum.

E. C. Abbott, '93, being in Topeka on business, could not resist the temptation to visit his alma mater, and so spent Monday here. He is studying law and playing ball at his home in Garden City.

J. E. Payne, '87, post-graduate student, furnishes the Junction City *Union* abstracts of the lectures recently delivered in the Short Course for Farmers. The first, President Fairchild's paper, appeared in the *Union* last week.

A graduate, writing to classmates, after experience in two other well-known colleges, says: "It has become my firm belief that amid whatever associations the members of our class may be thrown, by chance or by choice, we shall never meet with an institution of higher merit in discipline than the Kansas Agricultural College. The misfortune is that we were unable to realize it till we had finished the course and taken a square look at the world outside the College walls."

VANBLARCOM-STINGLEY.

Mr. Sam L. Van Blarcom and Miss Caroline S. Stingley, both of the Class of '91, were married on Thursday, March 8th, at the residence of the bride's parents in Manhattan. Rev. Mr. Phipps, of the Presbyterian Church, performed the ceremony. A goodly number of classmates and several College people were present. The young couple will live in Kansas City, which is a terminal in Mr. VanBlarcom's "run" as postal clerk on the Santa Fe Railway.

WILLIAMS-HAYES.

Mr. J. M. Williams and Miss Blanche Hayes, both of the class of '94, were married at the home of the bride's parents, Sunday, March 4th. The young couple will go to housekeeping a few miles from Osage City. At a meeting of the Class, the young couple were presented with the following resolutions:—

"Whereas, we, the Class of '94, do greatly feel the loss of two highly esteemed members, Mr. John M. Williams and Miss Blanche E. Hayes; be it therefore

"Resolved, that this marriage recalls the maxim that "Joy and sorrow go hand in hand," sorrow, at the loss the Class has sustained; joy, in that the prospects of their future happiness are the brightest.

"Resolved, that a copy of these resolutions be printed in the INDUSTRIALIST and also spread on the minutes of the Senior Class.

"MARY E. LYMAN,
"JENNIE R. SMITH,
"JOHN STINGLEY,
"Committee."

DEATH OF MYRTLE ROMICK.

The death of Miss Myrtle Romick, Second-year in 1892-3, on March 4th, of consumption, although not unexpected, was very sudden. A year ago she was compelled to leave college on account of failing health, and it was hoped that a change of climate might benefit her. Returning home from a trip to Colorado and California, with health unimproved, she lingered until the spring time, when loving friends laid her to rest. The Third and Fourth-year classes in a body accompanied by many other students, among which, during her college days, she was a universal favorite, attended the funeral at the Methodist Church, Tuesday afternoon, March 6th.

The Third-year Class adopted the following resolutions of respect:—

"Whereas, The death of Miss Myrtle Romick deprives our Class of a most dearly beloved member.

"Resolved, that we bow reluctantly to the mandates of that mysterious universal law that at the end of each life embraces all; that we cherish the thought that even death cannot sever the bond of memory that shall ever bind the sweet influence of her beautiful life closely to our own; and though her pleasant face and gentle voice shall be seen and heard no more in the meetings of our Class, the influence of her bright smiles and kind words that did so much to make our college life pleasant is with us still. Possessing the priceless attributes of a pure, noble, Christian womanhood, she leaves to our keeping many beautiful examples—an immortal heritage—that shall live within our lives and the lives of all we meet. While keenly feeling our own loss, our love and sympathy reaches out beyond ourselves to her sisters,—our college mates,—to her bereaved parents, and friends.

"Resolved, that these resolutions be spread upon the record of our Class, a copy be handed to the parents, and also be published in the INDUSTRIALIST.

"W. H. PHIPPS,
"ETHEL PATTEN,
"C. A. JOHNSON,
"Committee."

At a meeting of the Fourth-year Class resolutions were adopted as follows:—

"Whereas, we hear with sorr(of the death of our friend, Myrtle Romick, and we realize that two of our beloved class-mates do sorely feel the loss of a sister's love, and are mourning the early end of a strong and beautiful christian life; therefore be it

"Resolved, that we, the Class of '94, extend our most heartfelt sympathy to the stricken family, and especially to these our sister class-mates in this hour of bereavment. And we furthermore pray that they may be sustained and comforted in this hour of sorrow by the Heavenly Father, who doeth all things well, and who, even in the valley of the shadow, is our solace and friend; and furthermore, be it

"Resolved, that a copy of these resolutions be presented to our bereaved classmates and published in the INDUSTRIALIST.

"SARAH E. COTTRELL,
"LUCY H. WATERS,
"E. L. FROWE,
"Committee."

Scientific Club

March 9th.

President Nichols called the meeting to order. The minutes of the last meeting were read, corrected, and approved.

Prof. Hitchcock presented the subject of plant forces, manifested in the production of starch, and in the ascent of water in plants.

Prof. Hood was elected a member of the Program Committee, to take the place of M. A. Carleton, resigned.

The date of the next meeting was changed from March 23rd to March 30th.

Dr. Mayo was announced to give the paper at the next meeting.

Miss Lucy Waters was proposed for membership.

Adjournment. GRACE M. CLARK, Sec.

Notes From the College Farm.

Grass seeding is in progress this week. Twenty-four acres are to be seeded to mixed grasses and seven acres to alfalfa. It is all to be drilled in by a shoe drill with press wheels. This is our regular grain drill. The mixed grass seed consists of the following per acre: 13½ pounds orchard grass, 10 pounds English blue grass, and 5 pounds of red clover. The grass seed and clover seed is mixed in the proper proportion, and "cross drilled," putting half the amount in at each drilling. The seed is covered by one-fourth to one-half an inch of dirt, and is down in a furrow, that the drill leaves, about one and a half inches deep. Some of the ground was in corn and some in millet last summer. All was "fall-plowed," and received no further treatment until this spring, when it was gone over with a large plank "float," and this left the ground in fair condition, but a little loose and rough in places.

Oat seeding was finished Friday. This is about two weeks earlier than the regular seeding is generally done. The first seeding, March 1st, is appearing above ground. Several new varieties have been received for trial, which will be planted with thirty tested varieties which have been the highest yielders in former experiments. The rest of the experiments are a repetition of last year's, with a few modifications.

A new Hollinger lister grain drill has been received for trial. It is made by the Moline Plow Co., and is for drilling wheat or oats. The little lister plows are a foot apart, and can be made to leave a furrow six inches deep, and cover the seed about one inch deep. This can be used to seed on corn or grain stubble or on plowed ground. The seed is put down where the ground is moist, and if there is any rainfall the furrows will get the most of it.

Several sales of live stock have been made the last week. Mr. A. C. Thompson, of Ellis, purchased a young Shorthorn bull, two cows, and one calf. J. W. Stuckland, Esq., of Junction City, takes a young Shorthorn bull and a heifer.

The College never had a better lot of Shorthorns for sale. The bulls are by imported Craven Knight.

This will probably be the last chance to get his calves, as he is now over six years old and is past his usefulness.

The College herd has received its annual bath of kerosene emulsion. The following mixture is used: Two quarts water, one-fourth pound hard soap, one pint kerosene. One pint of this is mixed with three pints of water, and applied with a rag. It will take off a little hair sometimes, but does no harm in the spring. After the cattle are turned out to pasture, everything in the basement is gone over with a coat of white-wash. With this treatment, the herd is kept free from lice. Where cattle are tied up in stalls as the College herd is, they will get very lousy if some such treatment as this is not used. F. C. BURTIS.

List of Periodicals in the College Library, Mostly Bound.

(*Continued.*)

Agricultural and Horticultural.

Cultivator, Albany, 14 early Vols.
Dairy World, Vol. 9 to date.
Farmer's Magazine, 1841 to 1854 inclusive.
Field and Farm, Denver, Vols. 1 to 14, lacking a few Nos.
Garden, London, complete set 1872 to date, 44 Vol.
Garden and Forest, complete to date, 6 Vol.
Gardener's Chronicle, complete from beginning in 1842 to date.
Gardener's Monthly, complete set, 29 Vols.
Highland Agricultural Society, Journal and Transactions, 42 Vols.
Horticulturist, The, complete, 21 Vols.
Hovey's Magazine of Horticulture, a few Vols.
Jersey Bulletin, a few Vols.
Journal of the Royal Agricultural Society, 1840 to date, complete.
Kansas Farmer, nearly a full set.
Kentucky Stock Farm, a few Vols.
London Live Stock Journal, Vol. 25 to date.
National Live Stock Journal, several Vols.
Nebraska Farmer, several Vols.
New England Farmer, several Vols.
Ohio Cultivator, 14 Vols.
Ohio Farmer, about 30 Vols.
Orange Judd Farmer, Vols. 1, 5, 6—12 to date.
Popular Gardening, complete set, 6 Vols.
Rural New Yorker, 1880 to date except a few Nos.
Transactions London Horticultural Society, 10 Vols.
Transactions India Agricultural Society, 7 Vols.
Vick's Magazine, several Vols.
Western Agriculturist, several Vols.

Scientific.

American Chemical Journal, Vol. 9 to date.
American Journal of Mathematics, Vol. 12 to date.
American Journal of Science and Arts, complete except Vols. 13, 14, 15, 49, 50, first series.
American Meteorological Journal, Vol. 3—8.
American Naturalist, complete except a few Nos. in Vols. 9—13.
American Philosophical Society's Transactions. 1774-1886, also 1892-3.
Annals of Botany, Vols. 1, 2, 3.
Auk, complete set to date, 10 volumes.
Berichte der Deutschen Botanischen Gesellschaft, Vols. 1 to 10.
Botanical Gazette, complete to date, 17 volumes.
Bulletin of the Nuttall Ornithological Club, Set 8 Vols., complete.
Bulletin of the American Museum of Natural History, complete, 5 Vols.
Canadian Entomologist, complete to date, 25 volumes.
Chemical News, complete set to date.
Entomologica Americana, complete set.
Entomological News, complete to date, 4 Vols.
Insect Life, complete to date.
Journal of the American Chemical Society, Vols. 1—9, and 1893.
Journal of the Cincinnatti Society of Natural History, Vols. 8 to date.
Journal of the Chemical Society, London, 1864 to date, 55 Vols.
Journal of the Elisha Mitchell Scientific Society, 1887 to date.
Journal of Mycology, complete set to date.
Journal of Royal Microscopical Society, 3 Volumes.
Just's Botanische Johresbericht, complete.
Le Naturaliste Canadien, Vols. 15—20.
Microscope, several volumes.
Midland Naturalist, Vols. 8, 11, 12.
Nature, complete, 47 volumes.
Philosophical Magazine, Series 4th and 5th, 1852, to date, 89 volumes.
Popular Science Monthly, complete to date, 41 volumes.
Proceedings of the American Entomological Society, complete set.
Psyche, complete set to date, 6 volumes.
Science, complete set to date, 23 volumes.
Science Gossip, 1865 to 1878.
Scientific American, Vol 19, 44 to date, 27 Volumes.
Scientific American, Supplement, Vols. 1. 2. 11, to date, 28 Volumes.
Studies from the Biological Labratory, Vols. 4 and 5.
Zeitschrift für Analythche Chemu, 30 years complete.

Technical and Miscellaneous.

American Architect and Building News, complete set purchased, Vols. 1 to 8 not yet received.
American Art Printer, complete except 2 numbers.
American Engineering Journal, Volumes 61 to date, 7 vols.
Art Journal, London, 1884 to 1890.
Architect, London, Vols, 29, 33, 34, 35.
British Printer, 3 years to date.
Carpentry and Building, Vols. 8 to date, 8 Vols.
Congressional Globe and Record, complete except 4 volumes of the Globe.
Electrical Review, Vols. 6 to date, 18 Vols.
Engineering Magazine, complete to date, 4 Vols.
Engineering Record, Vols. 15 to date.
Gazette of the United States Patent Office, complete except a few numbers.
Good Housekeeping, complete set.
Inland Architect, Vols. 7 to date, 16 Vols.
Inland Printer, complete set to date.
Journal of the United States Military Service Institutions, complete set to date.
Locomotive, complete set, 1880 to date, 14 Vols.
Paper and Press, complete set (?)
School of Mines Quarterly, Vols. 7 to date.
Table Talk, Vols. 2 to date,
Van Nostrand's Engineering Magazine, complete set, 35 Vols.

COLLEGE ORGANIZATIONS.

March 2nd.

The spring weather does not produce any marked change in the good attendance at the sessions of the A. B. Society this year. The last session was opened by an instrumental trio, two guitars and a mandolin, played by Nora Fryhofer, Con Buck, and G. W. Fryhofer. Devotion was offered by W. Harling. The Society was favored with a declamation by A. C. Havens. The "Honor of Labor" was the theme. Florence Harling then gave a select reading. J. J. Fryhofer read a very interesting essay on "Reading." He spoke of the abundance of literature and the easy access to the best authors. More reading produces more thinking. His essay was concluded by Bacon's familiar saying on tasting, swallowing, and digesting books. "Drifting" was the title of a select reading by F. Bennett. The question, "Resolved, that books have a greater influence than the pulpit," was debated affirmatively by A. E. Ridenour and Lucy Ward; negatively by D. L. Timbers and W. H. Coffey. Mr. Ridenour spoke of the pulpit as being opposed to advancement because its beliefs were so ancient, also because it suppressed many good books. Miss Ward said that the pulpit depended on a book—the Bible—for its place. The negative enumerated the benefits coming from the pulpit, and spoke of the positive harm done by the startling mass of bad literature. The leading articles of the Gleaner as presented by G. L. Christensen were, "Progress of this College," "Pathetic Love Tale," (illustrated), "Communication with the Monkeys," "Sport Reporter," and the "Growth of Cotton." After recess there was a violin and organ duet by R. W. Clothier and Grace Secrest. During extemporaneous speaking, the book and pulpit question was taken up and discussed by the Society. The session was closed by a violin and organ duet, rendered by J. C. Christensen and Lorena Clemons. G. W. F.

March 2nd.

After chapel exercises, the Ionian Hall was well filled with members of the Society and visitors. After being called to order by Pres. Turner, all joined in singing one of our familiar College songs, with Minnie Pincomb at the piano, and were led in devotion by Ada Rice. After the roll-call, in the absence of the critic and marshal, Florence Corbett and Belle Frisbie were appointed to fill the respective offices. The program was opened with a piano solo by Mabel Farwell, after which Lou Spohr presented the Oracle, with the motto, "Don't pay too much for the whistle." "A Mother's Darling" was the title of a declamation by Maggie Correll. Lou Spohr then sang Dora Thompson's parody on "Ta-ra-ra-ra-boom-de-ay," with Miss Thompson accompanying her on the guitar. Laura McKeen's essay on "Twilight" was very interesting, and showed careful thought. The twilight of day was beautifully compared to the decline of life. Gertie Lyman afforded all a good laugh, by impersonating a girl who attended the K. S. U. Banjo club's concert New Year's eve, as she was relating the proceedings of the evening to her sister the next day. Miss Lyman's power of mimicry was made evident. A new and interesting feature of the program was a miscellaneous quiz, by Minnie Copeland. Slips, upon which a question was written, were passed to visitors, as well as members, and upon being called on each answered the question given him. Some of the interesting questions were as follows: "What is the origin of the words 'Ionian' and 'Oracle'?" "Why should not our College be represented in the State Oratorical Contest?" "Why not bind our Oracles of the past four or five years?" "If you were a 'woman bachelor" what profession would you follow?" "Sliding down banisters, or hanging on radiators, which is the most graceful for girls?" "Should Christian people attend theaters?" and many others, and nearly all were well spoken on extemporaneously. Eva Staley closed the program with a very interesting vocal solo, "The Story of an Indian Chief's Love for his Daughter." The business transactions were unusually lively and interesting, and continued until rather a late hour, yet roll-call for quotations was heard before adjournment. M. A. C.

March 3rd.

The Webster Society was called to order by Vice Pres. J. V. Patten. After roll call, E. H. Webster led in prayer. J. B. Norton was elected to membership and also initiated. Question for debate was, "Resolved, that the passage of the Wilson bill would strengthen and promote the industries of the United States." H. G. Pope, in introducing the affirmative, said the bill admits raw material free, which would aid our manufactures. Owing to cheap labor and natural advantages, other countries can produce finer and cheaper wool than we can, and as the sheep industry is retrograding, this clause would be a general benefit. The high price of machinery is maintained because protected. The bill contains an income tax clause which would equalize taxes and replace the protective revenue. J. W. Evans introduced the negative by saying sheep are being sold off in anticipation of the passage of the Wilson bill. Other countries can manufacture cheaper than we because of cheap labor, and therefore the passage of the bill would destroy our manufactories. England looks favorably upon the measure. Western States petition for protection of mining industries. M. H. Johnson, continuing the affirmative, said, "Competion is the life of trade;" we should have more of it. Our manufactories use the best of machinery, and can thus compete with foreign cheap labor. C. Farman, speaking on the negative, said that the American sheep are raised mostly for mutton. The income, he said, would not affect our industries. In summing up the affirmative, Mr. Pope cited that foreign nations admit raw material free and are thus enabled to produce cheaper manufactured articles. That an open market of the world would make an outlet for the surplus goods of our manufactories when the home market was glutted; and that the most prosperous period the infant industries of this country have ever possessed was during the time we had tariff for revenue only, commonly called "Free-trade," from the year 1846 to 1861. Mr. Evans, in concluding, said that it was a precedent that manufactories shut down under free trade, [?] that this bill was virtually a free trade bill. He said also that the bill would not aid all industries, therefore it could not meet the conditions of the question. The Society decided in favor of the negative. Patrick Henry's celebrated liberty speech was next recited by C. M. Park. "Completion of the Pacific Railway," was the title of a well-delivered declamation by W. T. Taylor. After recess, C. D. Mc Cauley rendered a vocal solo, which received hearty applause, but the encore was in vain. L. W. Hayes read an essay, "Woman in Politics," in which he took the stand that woman should be granted the ballot. E. L. Brockway, in a discussion, "Should Society Annuals be Abolished?" suggested the substitution of contests between the different Societies. Critic's report. Unfinished business. Under new business, the resignation of Pres. Williams was received, he being obliged to give up Society and College work. Mr. Williams was elected an honorary member of the Society and resolutions appropriate to the occasion were unanimously apopted. F. E. U.

March 3rd.

The Hamilton Society having been opened with prayer by G. G. Boardman, the name of M. W. Sanderson was added to our already long list of members. An essay on "Scientific Farming" by C. S. Marty was interesting and instructive, especially to the farmer boys. F. W. McQuaid recited to us the often told story of the American Indian in a manner that was wholly new. Remington in a discussion told us all the affects and defects of the Poland China hog. A long and interesting debate was next taken up on the question, "Does the present state of affairs indicate the need of a students' paper here?" The question was old, but it is only necessary to say that it was presented by two enterprising Fourth-years, namely, E. L. Frowe, affirmative, and J. A. Scheel, negative, who were seconded by two promising First-years, W. Anderson and W. Poole respectively. The Society, acting as judges, decided in favor of the affirmative. A well-written edition of the Recorder was presented by C. V. Holsinger. Yeager as music committee had secured the services of B. W. Conrad and C. S. Pope, who gave us a guitar duet and whistled an accompaniment, after which they responded to an encore and G. H. Dial seconded on the harmonica. Under extemporaneous speaking, the Society was favored by speeches from J. M. Williams and Clark, a former student. A. P. C.

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THE INDUSTRIALIST.

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THE SCHOOLMASTER AND THE POLITICIAN.

BY PROF. J. D. WALTERS.

IT is no misstatement to say that the schoolmaster is the only party that can settle the tariff question satisfactorily and permanently. He is the only power that can stop the enormous annual bill of imports from Europe. As long as the people are able and willing to buy articles of fine and industrial art that are not produced in this country, no tariff law can prevent them. An increase or decrease of customs duties will, to some extent, decrease or increase the quantity of the imports, and increase or decrease the cost of each article, but it cannot create industries that require of our laborers educational qualifications which they do not possess.

A glance at the export and import table of 1892, the latest obtainable data, will show that our exports consist chiefly of food articles, agricultural machinery, farm animals, seeds, leather, coal and coal-oil, timber and lumber, whisky and sprits, etc., *i. e.* raw materials or articles into the manufacture of which art and skill enter to a very limited extent; while the imports consist mostly of articles of fine and industrial art, *i. e.*, things the manufacture of which requires skill and taste to a very high extent. In 1892 we imported articles of this kind as follows:—

Paintings, Statuary, etc.	$ 2,336,000
Books, Maps, Engravings, etc.	3,981,000
Clocks, Watches	3,861,000
Laces	11,252,000
Knit-goods	5,829,000
Clothing	2,740,000
Buttons	1,317,000
Chinaware	8,707,000
Hats, Bonnets, Art-flowers, etc	3,695,000
Glassware	8,757,000
Jewelry and Precious Stones	13,715,000
Musical Instruments	1,027,000
Paper Articles	3,342,000
Silk Articles (excluding all raw materials)	31,172,000
Women's Dressgoods	12,765,000
Toys	2,475,000
Fur Articles	6,844,000

These items, in which the fractional hundreds have been left off, are simply samples which may show the character of the imports. The whole bill, according to official records, amounts to $827,000,000, and its enumeration would fill several columns of this paper. This enormous sum is paid Europe and a few other countries because, in the main, she has better taste and more skilled mechanics than we. The laborers of our great cities almost starve every winter, while we send over $200,000,000 to England, Germany, and France every year for articles five-sixths of the value of which consists in taste and skill, and only one-sixth in materials. It is certainly a point worth pondering over that while the products of art industry, so called, form one-fourth of the grand total of imports, they form only eight per cent or less of the grand total of exports.

The manufactures for which a country should especially contend are those in which skilled labor counts for much and raw material for little. These always yield the largest profits. Laborers who can produce them are well paid the world over. While the common wage earners—the miners, teamsters, spinners, sawmillers, brickmakers, masons, railroaders, etc.—of Europe are poorly paid, the makers of mathematical, optical, and musical instruments, watchmakers, jewelers, lacemakers, engravers, decorators, etc., of Europe are receiving wages that would be very acceptable in Chicago or Kansas City. Since the demand for the products of skilled and artistic labor is not limited by the number of consumers,—as, for example, the demand for articles of food,—but by their taste, and ability to purchase, the market for such manufactures is certain to expand greatly in the future. There is no reason why we should not produce a large part of the consumption of South America, Asia, and Africa. The possibilities of a vigorous extension in the direction of fine and industrial art of our shops, factories, and studios are simply without a limit.

Yet, we should advocate the manufacture of art articles not simply from the standpoint of political economy, but consider also the culture and all of that moral power which comes from education in art. Who is able to estimate the influence which such a change in our industrial life would exert? We have invented much. Our inventive faculty exceeds that of perhaps every other people. We have filled the world with labor-saving machinery. But the idea that art has any necessary relation to industry has only lately begun to enter into the minds of those most interested in the matter. If this condition of things is not changed, we shall go on in our subserviency to other countries; but if we are able to change it, we shall be free ourselves and enter the markets of the world with our products.

But how can the art industries be developed? Tariff laws may stimulate them to some extent, but the foundation must be laid by education, broad and deep. The politician must step to the rear and the schoolmaster to the front. The wearisome battle cry for "low tariff" and "high tariff" must abate, and systematic training in the various branches of art must be substituted. Drawing must be introduced into every public school of the land; art academies must be founded in every city; art departments must be organized in every college; free evening instruction in drawing and modeling must be provided for the laborers; exhibitions of works of art must be held; prizes must be awarded where such a stimulus will produce the desired effect. In short, there must be a general awakening all along the line. The World's Columbian Exposition has shown that we have the natural ability—what we need is the necessary training.

Horace Greeley once said: "The greatest problem before this Nation is the industrial training of the masses."

HOW TO BE ATTRACTIVE.

BY ALICE RUPP.

FLOWERS, which are among God's most blessed and most marvelous gifts to earth, are not all beautiful; nevertheless some possess charms which render them equally as attractive as brilliant colors, symmetrical form, and graceful bearing.

The little shrinking violet, arrayed in its dress of modest tints, for centuries was content in solitude to bloom beneath a blanket of leaves in close proximity to warm mother earth. But it was not always thus to dwell in sweet humility; some one discovered that it had a charm,—a delicate odor not possessed by some of its more beautiful and queenly sisters,—and as a result great violet farms are carefully, systematically, and successfully conducted near New York and San Francisco, that thousands of bunches of these dainty blossoms, still sparkling with the dews of their country home, may find their way to palaces of luxury and refinement, there to diffuse their sweet perfume and add their quota of happiness to the members and friends assembled.

Nature is an impartial parent, subjecting all her children to the same laws; hence, every person cannot be beautiful, for unto every one God has not given a comely face nor a graceful figure. But learn a lesson from the violet and be attractive.

The two great factors that go far toward giving those bright eyes, rosy cheeks, and clean complexions, which are so conducive to good looks, are health and cleanliness, though some have plain and irregular features, and can easily learn from the truth-telling mirror that they are not remarkable for external graces.

Don't worry, and thus add to your imperfections; rather comfort yourselves by the thought that you can make very beautiful old ladies if you but cultivate contentedness of mind, ease of body, and sweetness of disposition and trust in God's goodness and love.

Sometimes homeliness is to be considered a blessing rather than a misfortune, as it leads to the careful development of character and the cultivation of those rare qualities which in the beauty — who has personal charms as an attraction — are oft times allowed to smolder and perish.

To be attractive, practice keeping gracefully still. This does not apply to the tongue, but to the other portions of the body that apparently never rest. Repose of manner is possessed by so very few that when it is recognized it appears to be the one most desirable charm in woman.

The energetic nature of woman may be responsible for the loss of this charm; but be that as it may, women are bundles of nerves, and show this weakness in the most every day trivial happenings. Grace of manner can never be possessed until one understands there is no charm nor beauty in fidgeting. Get the nerves so well under control that it will not be necessary to bite the lips, clinch the hands, or tap the feet when worried or annoyed; the first great step will then be taken, and the rest will come easily.

If you do not wish to grow old before your time, watch these symptoms and nip them in the bud directly on their first appearance.

Cultivate a refined taste in your manner of dress. Let every article of apparel, from the neat-fitting,

well-kept gloves and boots to the dress and coat, be in harmony with each other and consistent with your means. Cheap, ostentatious dressing awakens a suspicion—though it be without foundation—that is not always as commendable as it should be to the reputation of the wearer. Rather prefer that your dress be plain, neat, exact as to fit, and suitable, as there is always a charm and self-satisfaction in the thoughts that you are becomingly and fitly dressed.

Then cultivate the habit of self-forgetfulness, and thoughtfulness for the happiness of others, and you will always be winning. The vain, selfish beauty may reign supreme for a time, but the days of her triumph are short, as she cannot compete with the homely maiden who is popular because she is so lovable. Her father confides in her, and her mother leans on her. Her friends quickly learn her attractive features, and go to her for assistance and advice. The little girls bring their dolls to be dressed, and the boys seek her out when the "sums in 'rithmetic won't come out right," or when the geography lesson is in some foreign land where the names are so hard to pronounce. By and by a marvelous thing happens: she is actually growing interesting, agreeable, and captivating, and each quality is far more valuable to a woman than the possession of mere beauty without other winning personal attractions.

Practice the golden rule which you know so well, and at the same time take cognizance of its twin sister which is, "Think and say all you can of the good qualities of others; smother, forget, and keep silent concerning their bad." You cannot conceive how much such a course will heighten your own happiness and raise you in the esteem of your companions. Did you ever think more of a friend because she was continously finding fault with others? Are you on better terms with self after drinking from the same goblet? Scorn to say in one's absence things you would not dare to repeat in her presence. Friendship is exceedingly fragile; therefore beware of the pledged secret. Suppose that persons are cross and stingy and ugly and full of frailties, does it make them better that you parade their imperfections to your fellow companions? Never! rather does it give you a taste for fault-finding and causes your soul to grow smaller and become like the foul bird of prey that prefers carrion to food.

True, pure conversation is attractive; but rise above idle gossip. Anybody can recapitulate the troubles of the kitchen, the cost of the last new dress, or the business of the neighborhood. But to talk wisely, wittily, instructively, freshly, and delightfully is a rare accomplishment. It implies much patience and arduous labor, also a cultivation of observation, intellect, and memory. Study books, and in the course of your reading store memory with the best thoughts expressed in the best English, which shall be a fountain of knowledge always with you, and from which, at various times, and amidst the shifting circumstances, you can draw as occasion demands.

Study more especially the people with whom you mingle, as association is the great field from which much valuable information not found in books is harvested. In a little while will be acquired that graceful art which will attract, not the gay and frivolous butterflies of fashion, probably, but intelligent men and women; and what is more, you will be enabled to retain them, because they are agreeably and pleasantly entertained. Remember that the beautiful language of an Ingersoll may not be in the power of everyone, but simplicity and straightforwardness are.

Lead a moral and christian life, that by your example your friends may be brought to a closer and sweeter communion with God. Some writer has so beautifully expresssd this sentiment in the following words: "Only the diamond reflects light in its essential purity. This is the secret of its superiority among gems. Other gems may be beautiful, but the diamond is transcendently beautiful. In your example as christians, be diamond characters! Catch the divine light, and give it forth again uncolored by selfishness of any sort. Be so simple and so sincere that all the beauty and all the truth coming to you out of the God-life and the Christ-life shall shine through you and be the magnet that shall attract others and make them also transmitters of light. It is self consciousness that spoils the beauty of character. To be attractive, lose the immediate sense of self, and think only of that wider relationship of God and neighbor. 'Keep thou thyself translucent, that thou mayest never see a shadow.'"

Attention to little things is most necessary in the dairy. To paraphrase an old quotation: Attention to trifles makes good butter, and good butter is no trifle.—*Farmers' Review.*

FARM FENCES.

BY J. U. SECREST, '94.

IT is often said that a farmer's fences are an index to his thrift and well-being. Whether this be true or not, the fences are an important part of the farm, and are just as fundamental to the welfare of the owner as his house and barn, or even the land itself. Poor fences are associated with weedy fields, poor crops, hard work, and poor stock; they are the common cause of innumerable enmities between neighbors, untold law-suits, more than one lawyer's wealth, and many mortgaged farms.

A fence should answer the purpose for which it was built. It can be made ornamental and expensive as well as anything else; but for an ordinary farm fence this is mere extravagance.

In this part of the State we are practically limited to three kinds of fences; viz., the wire, the hedge, and the stone fence. The wire fence is undoubtedly the cheapest in the long run. It makes a good fence about pastures for cattle, sheep, horses, and hogs. For a division fence in fields, it answers the purpose better then either hedge or stone, for it is easier removed when not wanted, and the weeds growing along it can be kept down with less trouble. As a fence for a level country, it has the advantage over hedge and stone in not promoting the drifting of snow. In winter this is an important item. However, as a shelter for stock it is very deficient, notwithstanding the support it has by many stock-raisers.

The osage orange is very valuable for fences and much used. Nothing helps to give a cultivated farm a better appearance than to have it laid out into regular fields by well-trimmed hedge rows. This adds to the good appearance of the farm, but practically as far as the writer's experience goes, a hedge row through the farm is a perfect nuisance unless closely trimmed and this treatment often makes it a poor fence. If left to grow for a season or two it is almost impossible to subjugate, and is generally left with good excuses to the "scrub hand" who hasn't any "say" about the matter. The roots reach out several rods from the fence, and are ruinous to farm machinery. The twigs and limbs, with their cruel thorns, scattered over the field, are an abomination. Out from the fence for a rod or two the soil packs solid, the moisture from the ground is taken up by the hedge plants themselves, and all the rubbish blown by the wind finds a lodging place in the fence, making it a perfect wintering place for many injurious insects and rodents. For a boundary fence around the farm, it answers the purpose well, but it should be kept trimmed and never allowed to make more than one season's growth. As a partition fence, it is undesirable.

Stone is very durable material, and if laid up well makes a good fence, but a poorly built stone fence, with its tumbling down walls, is an expensive scarecrow to any farm. If not built up good and tight, the small boy, dog, and rabbit will play hide and seek among its crevices, and the wall is bound to suffer.

The scarcity of timber in this State makes it impossible, at least not profitable, to use rail and board fences. They are relics of backwoods and frontier life, anyway.

Too much cannot be said of the necessity of having good fences on the farm. From the money side of the question, and from the esthetic point of view, it will pay.

Is the Agricultural Paper Practical.

The charge is sometimes made against the agricultural paper that it is not practical; that its pages are too often filled with theory from which the farmer can derive but little if any practical good. The farmer who is a constant and careful reader of the agricultural papers, who keeps himself posted on the results of the work of our experiment stations and agricultural colleges, and who is willing to listen to the experience of others and be guided, to some extent, at least, by their experience, will not prefer such a charge nor give it serious consideration when advanced by others. It would be remarkable indeed if every reader should find in the current issue of his paper some suggestion or suggestions he could use in his business just at that time. But this does not alter the fact that the suggestions are there; some body will profit by them, and perhaps they may become profitable to you in their own good time. We believe the fault to lie more often with the reader. When the time comes when these suggestions could be used they are forgotten and the paper containing them is lost. It would be a good idea to keep a file of your papers, and in a short time you will have not only an encyclopedia of valuable and practical information to which you can refer almost daily with profit, but you will have a complete history of the agricultural progress of your country.—*Nebraska and Kansas Farmer.*

Forest Improvement.

Biltmore Forest is the first practical application of forest management in the United States. Biltmore Estate, of which the forest is a part, lies near Asheville, in the western part of North Carolina. Before its purchase by Mr. Vanderbilt, the small farmers to whom the land belonged had pastured their cattle in the forest, had burned it over to improve the pasturage, and had cut a large proportion of the trees which could be used or sold for fencing, fuel, or sawlogs. At the time when its management was undertaken, comparatively few large, sound trees of white, black, and scarlet oak and short-leaf pine, which are the more important species, were still standing in the forest, and the condition of a large part of it was deplorable in the extreme.

The prime object of the management at Biltmore is to pay the owner while improving the forest. To this end "improvement cuttings" were begun in some parts of the forest, to remove old trees which had reached a merchantable size and were standing over and injuring good young growth. In other places the only measures required were to exclude cattle and fire, and give the forest absolute rest.

In the process of felling the timber the trees to fall were first carefully selected and marked, then sawed down and reduced at once to cordwood or sawlogs or both. Great care was used in selecting the place for each tree to fall and in throwing it so that the top might not crush the young trees among which it fell. The result was a gain of probably 95 per cent in the condition of the young growth over that which usually follows ordinary lumbering, while the increase in cost was not more than 2 or 3 per cent. The output of the forest was sold at market prices in open competition, but most of it was consumed by the other departments of the Estate simply because the prices charged made it worth while for them to purchase of the forest rather than elsewhere.

During the first year a great improvement was effected in the condition of the forest at a small cost. Out of a total expenditure of nearly ten thousand dollars, the net cost of improvement was somewhat less than four hundred dollars. During the year 1893, however, with woodsmen more fully trained and the whole force in better working order, the management yielded a net profit of rather more then $1200.

The Margin of Profit.

I was impressed the other day by finding a merchant figuring on a bill of groceries and allowing himself but two or three per cent as a margin of profit. Its truck me that if agricultural operators would take account of the margin of profit with equal care, they might often find more money in business. Another merchant told me that his constant care was to keep his scales exactly balanced; for when they were only a little off balance he was sure to lose money all the time. On the other hand, you can hardly find a farmer who plans ahead to take advantage of a two or three per cent margin.

Figures to illustrate this point could be multiplied to any length. In bulletin 29. Nebraska Experiment Station, are some instructive notes on the cost of farm crops. In four tests with wheat the cost of the grain in the granary varied from $0.166 to $0.276 a bushel. The yield varied from 33.07 to 40.75 bushels an acre; the larger yield naturally costing the smaller rate. Thus one method of culture gave a profit of $12.77 an acre, when carried on directly beside another method, which gave a profit of only $7.36.

Some time ago the Kansas Experiment Station published a bulletin describing a new method of handling potato seed to secure larger and better crops. Without stopping now to summarize the figures given there, I may say that, at the time of the publication, I took the time to average the increases of many of the separate experiments reported, and I remember that those included in the calculation gave an average of 46 per cent increase in the crop over the ordinary method of handling potatoes.

Yet I would feel safe in guessing that not one hundred farmers and gardeners in Kansas had been impressed with these figures to the extent of adopting the new method of culture. What would become of the merchant if he neglected to take advantage of a margin of 46 per cent? He would be sent to the insane asylum. Why cannot a farmer make money by figuring on the same problem? This is certainly a strange situation if he cannot.

In this connection, the character of the seed sown should receive special consideration. I have my grave doubts as to the value of comparative tests of varieties so extensively pursued by the experiment stations; but they give continual emphasis to this fact—that the influence on the character of the seed has a considerable influence on the extent of the crop. It is the rare exception to find a test of this sort reported in which the best yielding variety does not give twice the product of the poorest one. And I remember that in the most extensive trial that I ever observed personally one potato yielded 144 pounds when another variety yielded one-half pound, the same amount of each having been planted.

It is not alone a difference in varieties, regarding as of the same variety all seed of the same pedigree, but a difference in strains of seed which is to be carefully weighed. A well-grown and well-ripened strain of a particular variety will often give 25 per cent more on the resulting crop than a poor strain of the same named variety. While it is impossible to determine accurately beforehand just what the differences in these points will be, a careful study of any case will usually approximate it, and it ought to need no argument to point out the utility of such study.—*F. A. Waugh, in Kansas Farmer.*

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Miss S. Wood visited College Friday.

Miss Jessie Pickett visited College Monday.

Miss Flossie Fox visited classes at College Friday.

Miss Mable Gillespie visited College Friday afternoon.

Miss Bertha White, of Junction City, was at College on Thursday.

Mrs. B. Dial and Miss M. A. Dial attended the exercises Friday afternoon.

Belle Frisbie, Fourth-year, was detained from classes Friday by sickness.

Mrs. Ellis, of Havensville, visited her daughter in Third-year classes, yesterday.

Inez and Elva Palmer enjoyed a visit this week from their brother, of Clifton.

Rev. O. M. Bowman, of Blue Rapids, looked over the College Tuesday afternoon.

Miss Trego and Mrs. Helm were among the visitors at the chapel exercises Friday.

Pres. Fairchild is elected corresponding member of the State Historical Society.

Clyde Farman, Second-year, has been kept out of school several days by sickness.

Sadie Moore, Fourth-year, has been kept from College for several days by sickness.

The next meeting of the Board of Regents will be on Wednesday, April 4th, at 3:30 P. M.

Miss B. Briggs and Miss McGibbons, of Junction City, were visitors at the College on Thursday.

The Whitville boarding club dissolved this week on account of dissatisfaction among the members.

Prof. Walters will lecture before the Riley County Teachers' Association at Leonardville, March 24th.

Mrs. Graham entertained about fifty members of the Junior Christian Endeavor Society last Saturday.

H. G. Johnson, Second-year, enjoyed a visit Friday from his brother, who is on his way home from Kansas City.

Miss Bowker, who is one of the teachers at Musgrave's Business College, attended chapel exercises Friday afternoon.

The State Board of Public Works is expected today for the monthly inspection of progress and estimates upon the new building.

Pres. and Mrs. Fairchild have a visit this week from Mr. and Mrs. Kirshner, of Kansas City, Mo. Mrs. Kirshner, with her little son, will remain several weeks,

Professors Georgeson and Willard represent the College this week in a Farmers' Institute at Hutchinson. Today Prof. Georgeson, by special request, assists in an Institute at Junction City.

The Chemical Department of the Experiment Station is distributing improved sorghum seed. The seed is put up in quarter pound, half pound and pound packages, and will be sent on receipt of stamps for postage. Address Prof. Failyer.

Mrs. Kedzie was "At Home" to Mrs. Winchip and the afternoon sewing class, Tuesday afternoon. She was assisted by Misses Stokes, Cottrell, and Rice. Dainty refreshments were served, and all united in thanking Mrs. Kedzie for her hospitality.

Mr. and Mrs. Breese, of Elmdale, are visiting with the family of their son, Assistant Chemist Breese. They go home the first of next week, and will take their daughter with them for a short visit, when all plan to spend a month or more with relatives in Ohio.

Regents Wheeler and Secrest spent the morning of Wednesday in consultation with the President, as Committee on Grounds and Buildings, over the necessary provision for furnishing the new building. Mr. Wheeler went home with Mr. Secrest for a day's visit, returning on Thursday to his own home.

Friday afternoon, after a well chosen selection by the College Band, the second division of the Third-year Class appeared in chapel with the following orations: G. H. Dial, "A Product of the Farm;" G. A. Dean, "Morality of Today;" Susan E. Johnson, "A Sod School House;" S. H. Creager, "The Object of a College Education;" Mary Finley, "War Songs;" F. A. Dawley, "Contests;" Geo. Doll, "Are We a Civilized Nation?" Hortensia Harman, "A Coincidence;" V. Emrick, "Ups and Downs of District School Teaching;" Nora Fryhofer, "Mrs. Browning;" A quartette consisting of Mary Lyman, Rena Helder, J. V. Patten, and A. C. Cutler, assisted by the Band, rendered in a pleasing manner, "Marseilles," the national anthem of the French.

Two new Regents are named this week for the places so long held by Regents Forsyth and Wheeler. Their commissions will date from April 1st, 1894. They are Mr. C. B. Hoffman, of Enterprise, Dickinson County, and Mr. C. E. Goodyear, of Oatville, Sedgwick County. Mr. Hoffman is widely known as a thrifty business man, interested in banking and milling. Mr. Goodyear is an energetic farmer interested in the College because of its work for agriculture.

GRADUATES AND FORMER STUDENTS.

Olive Voiles, Second-year in 1891-2, visited College Friday.

Nora Newell, '93, attended the chapel exercises yesterday afternoon.

Mary Pritner, First-year in 1892-3, is visiting Sue Long, Second-year.

Mae Lyon, student in 1887-88, and Will Clark were married near Bala on the 11th.

Myrtle Harner, of Lasita, Second-year in 1892-3, is visiting Fannie Parkinson, Second-year.

Riley Ingraham and Nora Baxter, both former students, were married in Manhattan on the 15th.

Ivan B. Parker, '92, graduates from the University Medical College, Kansas City, Mo., next week.

Truman Allen, Third-year in 1892-3, came up from Topeka Wednesday to attend the wedding of his sister.

W. E. Smith, '93, closed his term of school on Deep Creek, March 10th, after a very successful term. He enters the Horticultural Department.

C. E. Yeoman, '92, presented a paper, entitled "Parents' Relation to the School," before the Rush County Teachers' Association at LaCrosse, March 10th.

Emma Jackson, First-year in 1888-9, was married, March 13th, to R. J. Puett of North Carolina. The couple will make their future home in Manhattan.

Ben Skinner, '91, appears in counterfeit presentment along with other prominent citizens of Brown county in the recent photographic edition of the Hiawatha *World*.

Elsie Crump, Third-year in 1892-3, who has been teaching near Garrison is at home, her school having closed on March 10th. She will probably re-enter College in the Spring term.

Notes from the College Gardens.

The College orchards are being sprayed with a solution of copper sulphate, one pound to twenty-five gallons of water. This is the first step in the war which it is proposed to wage this summer against the apple-leaf scab, so prevalent last season. A Myer's spray pump is used, with a barrel for a reservoir mounted upon runners. A "vermoral" nozzle completes the outfit, which is handy, durable, aud of a moderate cost. For small trees, the nozzle is attached directly to the hose, but for larger ones a lance is used consisting of a six-foot brass pipe.

The radishes and lettuce growing in the benches of the propagating houses look as though Spring had actually come. A sample of each was furnished for the Faculty dinner last Monday, and what remains only looks the better for the thinning. Denver Market, Iceberg, and Black Seeded Simpson lettuce were sown, and French Breakfast, Scarlet Olive Shaped, and Burpee's Glass radish. The Burpee's Glass has made a remarkably strong growth, but, being a long radish, of course does not mature as soon as the other two.

The first planting of potatoes is being made today. It consists of ten pounds each of first crop and second crop seed from the ten leading varieties grown here at the College. Besides this, two 500 feet rows of Omaha Market are planted in recognition of the good results heretofore obtained with that variety.

Several of the *Loniceras* (*Tartarica*, *Sempervirens*, *Halliana* and *Varonish*) are almost in full leaf, while the swelling buds of the plum and cherry trees admonish us that only a few days of the present warm weather are necessary to bring them out in blossom. In fact, a little cold weather just now would be exceedingly disastrous to many things.

The hot beds were made the first of the week, and only await a little lowering of the temperature, which at present stands at 144° F., to be sown with onion, cabbage, and tomato seed. F. C. Sears.

Notes From the College Farm.

The ground is getting somewhat dry, and wheat is showing need of rain.

For the past three years *Lathyrus silvestus*, or "Flat Pea," has been under trial on the College farm. This plant is a genus of leguminous plants. It is a European species, and has been introduced into this country in the last few years. It is advertised as the "Great Fodder Plant" and the greatest natural "nitrifying" fertilizer. The results here, so far, are very discouraging. We have tried to get a start from the seed, and also by importing plants a year old and transplanting them. First, about one seed out of six that were planted to the hill, grew. Next, the seed was four weeks coming up. The hills were all marked and the ground weeded twice before the seed came up. The growth during the summer was very slow and the ground had to be constantly weeded to keep the plants from being choked out. By fall the plants had made a growth of about six inches. The transplanted plants did but little better. Thus far our experience coincides with that of most persons who tried the plant. Every one who grows the plants from seed will have this trouble the first year. But few of our plants survived the next winter, and what did made but a weak growth the next summer and perished. Probably the plant failed to do well in our soil, as it has a stiff clay sub-soil, and alfalfa does not grow well in it. This plant is like alfalfa in that the roots grow deep and do best in a loose, sandy soil. Further tests will be made of it this year on a larger scale. The seed is very expensive,—$5.00 a pound,—and six pounds are required to seed an acre. This plant is very successfully grown in many parts of the United States now and has proved itself worthy of trial.

Inquiries are received about the "black hulless" barley. It was grown for the first time on the College farm last summer. It produced well there. It differs from common barley in that the glume comes off in threshing, and the kernels are black. Our plan is to seed several acres with it this spring.

Now is the most interesting time to go over our wheat experiments in the field. One of the most interesting experiments is where we have wheat seeded at intervals of ten days apart, from August 20th to November 1st. On the first seeding we have a good "stand" and growth, and from this downward we have a gradation, but not regular, to the last seeding, where there is about one-third of a "stand" of small, weak plants about an inch and a half high that have not tillered any. The early seedings are growing vigorously, but the last seedings will perish soon if we do not have rain.

The grass seeding that has been under progress the last week was finished Friday. It required fifty-three hours to "cross drill" the twenty-four acres. This is divided into three fields which would make some difference in the time required. The drill was set to seed a little over one and a fourth bushels of wheat to the acre. The seed cost $2.63 per acre. The hard wind that blew the 10th did not interfere with the drilling or blow any of the seed out of the ground.

F. C. Burtis.

Organization of Farmers.

A meeting of from thirty to forty representative farmers of Riley County convened at the Court Room in Manhattan on March 9th, to hear an address by the Hon. Martin Mohler, ex-Secretary of the State Board of Agriculture.

On motion John Warner was chosen Chairman, and W. Marlatt Secretary.

After listening to the very able address with regard to the utility and purpose of a farmers' organization for mutual improvement in lines of agricultural industries, it was moved to effect a temporary organization by the choice of the present officers as such, and that a committee on permanent organization be made by the appointment of Wm. Knipe and J. L. McDowell, together with the Chairman and Secretary, who shall appoint a time and place for such meeting for organization.

The 31st of March, at 2 o'clock P. M. sharp, was selected as the most opportune time, and the place of meeting the Court Room in Manhattan.

The purpose is to hold the meetings, after a permanent organization is effected, at different parts of the county, wherever the largest number of farmers may be reached and the greatest amount of good thereby attained.

A day now and then might be very profitably and pleasantly spent in holding institutes at such points as Randolph, Leonardville, Riley, Zeandale, and other localities with much more interest and greater benefits to all concerned, and in attendance, than if the attempt were made as heretofore to hold them all at one place. Those of us who remember the good fellowship and social benefits of such non-partizan organizations in the past will be rejoiced to see them revived on a better and we hope more permanent basis. Come out, then, to the meeting three weeks from tomorrow, and take a part in the permanent organization.

W. Marlatt, Sec'y. John Warner, Chairman.

COLLEGE ORGANIZATIONS.

March 6th.

In the Alpha Beta Society, during this term, there has been so much prepared music that it was a pleasing variation to have the session opened by congregational singing. After music, Miss Ward led in devotion. Miss Paddleford was to speak, but not being prepared she was put on the program again for two weeks hence. Miss Philbrook gave a declamation, "Two or Three." J. M. Westgate presented an essay on "A Day at Trouting." It was a clear description of a lazy fishing tramp on a sunshiny day in spring. J. F. Odle and R. W. Rader were on the affirmative and Mr. Limbocker on the negative of the question, "Should the loyal slave holders have recieved pay for their slaves?" Two of the principal arguments brought up were, that the slaves before the war were the same as property, and if taken should be paid for; it would be impossible to know who was and who was not a loyal slave holder. The judges decided two to one in favor of the affirmative. The debate was followed by a vocal duet by Misses Jennie and Kittie Smith. The selection, "The Land of the Swallows," was very pretty and well rendered. The Gleaner was presented by J. B. S. Norton. Although the high standard of the recent editions of the Gleaner has been commented on, this issue is worthy of especial praise. The editorial gave us the author's religion, politics, and peculiarities; a day in a quiet country village store was vividly described; a backwoods Fourth of July celebration was reviewed; an article told us how to succeed in college; the grumbler was defined and portrayed; and after failures were discussed the paper was closed by comments on hand-shaking. After recess the questions for extemporaneous speaking were along the line of Russia: Its government and the condition of its peo-

ple. The business part of the session was followed by music and adjournment. G. W. F.

March 10th.

The Hamilton Society was called to order at 7:30. Roll-call showed an audience of about eighty members, in addition to which was a number of visiting friends and students. After devotion by R. K. Farrar, the program was opened by H. G. Johnson with an Oration, subject, "Is Kansas a Temperance State?" Mr. Johnson proved that it was far from being a strictly temperance State. The next and last thing on the program was a mock trial of Holland vs. Stowe. A. D. Rice, having been asked to act as Judge, took his place, and the Society Hall was converted into a courtroom, the attorneys took their places and accepted the following jury, which was appointed by the Judge: E. L. Frowe, J. A. Scheel, V. Emrick, J. Poole, O. R. Smith, and G. F. Farley. The plaintiff's attorneys were W. O. Staver and C. D. Adams. The defendant's attorneys were I. Jones and C. A. Johnson. W. H. Painter, as Constable, now ushered in the plaintiff, "Mrs. Phœbe Stowe," better known as C. F. Doane. The Judge now read the charge and swore in the witnesses; R. J. Barnett and C. M. Brobst acting as witnesses for the plaintiff and F. Yeoman and R. S. Kellogg for the defendant. As the attorneys proceeded to examine the witnesses, it seemed that Mrs. Stowe was washer-woman in Cokeville, Wyoming. John Holland was the owner of a large ranch a few miles from town. He had taken his washing to "Mrs. Stowe" for one year, and the bill had amounted to $3.65; so she asked him for the money and he gave her a check for $115 from which to take her change, and because she couldn't do it he refused to pay her, for which she had him arrested. The trial was long and well handled, each lawyer working hard to gain his point. It represented an ideal frontier trial in every particular. The jury was conducted to the jury room by the constable, and after due consideration they returned with the verdict "guilty." The Judge considered the question a moment, then fined Mr. Holland $10 and all the costs. A. P. C.

March 10th.

The Websters were called to order at 7:30 by Vice-Pres. Patten. Following roll-call, Chase Cole led in devotion. "Resolved, that the statesman has done more for this country than has the soldier," was the question for debate. J. B. Harman opened the affirmative by defining the terms statesman and soldier. He said the constitution upon which this government was founded, all treaties, and the laws which govern us, are the work of statesmen. The mission of the statesman, he said, is to build up, while that of the soldier is to tear down. E. H. Freeman, in defense of the soldier, went back to the Magna Charta for his first argument, saying that that corner-stone of English liberty was an instance of the soldier compelling the ruler to submit. War might be postponed by the statesman, but, he added, the soldier is soon or late called upon to settle the difficulty. Our past relations with the Indians have been such as to require the service of the soldier. In continuing the affirmative, C. P. Scott claimed the soldier is spurred on by the orator, and in all wars the statesman is the guide doing the most important work, that of leading. J. E. Trembley, in speaking further on the negative, said that if the statesman did not have the soldier to carry out his ideas, he could do little, hence the soldier is the last resort, and therefore the most important. Mr. Harman summed up the affirmative as follows: The Magna Charta was drawn up by statesman. Had the Indian not been cruelly treated by the soldier, he would have been dealt with by the statesmen as was shown by Penn's treaty with them. If the Civil War had been prevented till the present time, the enlightenment of the age would cause it to be settled by arbitration. In closing the negative, Mr. Freeman said the Magna Charta would have had no effect without the soldiery to enforce it. Statesmen did attempt to settle the slavery question, but with what success? the soldier alone could effect the desired end. This nation was founded by the soldier, saved by him in 1879, in 1812, and again in 1861-65. Has the statesman done more than this? The negative won the question. S. H. Savage next delivered a well-chosen declamation, "Farewell to my Mother." The remainder of the program, with the exception of the paper, was passed for the evening. E. H. Webster presented the Reporter. The motto, "Be True," was ably amplified in the editorial. Recess followed, after which the Critic reported. The business of the evening consisted mainly in arranging for the Society annual. Adjournment, 10:30. F. E. U.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The State Board of Education will meet on March 21st, at Topeka.

The Board of Education of Leavenworth have appropriated $200 for additions to the high school library.

The editors of the Baker University *Beacon* are preparing an illustrated souvenir edition for next month.

The northeast and southeast Kansas Teachers' Associations will hold a joint meeting at Lawrence, April 5th to 7th.

The Normal Institute of Butler County will convene June 4th, 1894, at El Dorado, and will last four weeks. The Institute will be conducted by Prof. A. S. Olin, of Lawrence.

The March session of the Riley County Educational Association will be held at Leonardville on the 24th. The meeting will held in the Methodist Church. A public dinner will be spread in Erpelding's Hall. The program is rich and interesting, and the meeting ought to be well attended.

The very latest from the National Educational Association headquarters is that the Western Passenger Association has declined to extend the limit of return tickets beyond July 16th. Duluth has been dropped, and the directors are now considering invitations from Portland, Me., Boston, and Asbury Park, N. J.—*Western School Journal.*

Baker University will soon have a military company. Lieutenant Smith of the U. S. Army has been detailed to take charge of the new department on the 20th of this month. We congratulate the University on this valuable acquisition. With systematic military drill several hours per week, and an hour of work in the mechanical workshops every day, the football and baseball craze is not likely to grow rampant.

The Emporia *College Life* in a lengthy article denies the charges of plagiarism made by many Kansas papers against the winning orator, J. W. Wetzel, of Winfield College, of the last State oratorical contest. It publishes paragraphs from both orations to show that Mr. Wetzel took an entirely different view of "faith," the subject of Mr. Proutly's oration from which he is accused of having culled rather freely.

The County Commissioners of Norton County have been petitioned to call a special election to vote on a county high school to be located at Edmond. Edmond proposes to furnish rooms for such school. Lenora offers a site and $4,000 for a building, and Norton offers the best school room in the county. Why should not the towns of a county offer inducements, and then unite in voting for a school at such place, and accept such offer as will best serve the intersts of the county? —*Teachers' Voice.*

Of late years it has become fashionable among college men to under-rate the student who gives most of his time to his text books. In almost any college paper there may be found some article beseeching the student to give less time to his books, to get acquainted with his classmates, to learn men and the world. It seems that among students, the word text-book is coming to signify a book which is prosy, pedantic, and narrow, and which should, therefore, as much as possible, be let alone. This way of thinking is surely wrong. The prime object of a student in college should be not to learn the ways of the world; there is plenty of time for that in later life. He should rather concentrate his efforts upon securing mental training, and upon acquiring useful knowledge. Books are chosen as text-books only because they are considered the best authority obtainable on the subjects of which they treat. This being true, they are certainly worthy of careful study; and the student who puts all of his time upon them is likely to receive greater benefit, than the student who passes over them hastily, and spends a large part of his time in reading other books and getting acquainted with his fellow students. No virtue will help the student so much as close application to his books; and by his books is meant his text-books.—*Student Journal.*

How to Get Rid of Moles.

This troublesome little animal may be got rid of easily by the use of a trap that is sold by all dealers in farm implements or hardware stores. It is made with a double, three-pronged fork that is held by a catch. When the catch is moved by a trigger, a strong spring forces the fork down into the earth and impales the mole. The mole, in raising the earth that is pressed down when the trap is set, lifts the trigger and this disengages the fork. The trap is set so that it straddles the burrow of the mole and the forks are then right over the run, and when they are loosened they are driven into the ground on each side of the trap so as to be sure to get the mole in whatever direction it may be passing. If the trap is rightly set it takes the animal every time. Sometimes much mischief is done by ground mice that find their way into the moles' runs. To get these pests, a few small pellets of meal mixed with tallow and a little rat poison may be dropped in the runs. The trap described costs about $2.—*Colman's Rural World.*

The best farmers are those who are able to discriminate and to determine which is the best paying crop for their farms, and to grow it, instead of following the beaten track of years of practice simply because it has been their habit. They are finding out what is the best paying crop on their farms, all things considered, and they are pushing those branches for all they are worth. Ill success lies along any other path, and the sooner the thousands of farmers who are struggling along in old (and pretty muddy) ruts recognize this fact the sooner will they be emancipated from their present uncomfortable positions. Is your farm producing what it is best fitted to produce, soil, climate, and markets being considered?—*Colman's Rural World.*

A Good Education Pays.

1. In dollars and cents. All testimony of statistics agrees in showing that educated laborers of all ranks have better work and better wages than the uneducated.

2. In influence and position. Careful estimates make it certain that the chances of promotion to places of trust and power among men are almost two hundred times as great to an educated man as to the uneducated man.

3. In usefulness. The bulk of good work in the world—discovery, invention, government, philanthropy, and religion—is brought about by those who learn to think by study.

4. In enjoyment. Our pleasures grow out of what we are ourselves more than from surroundings. A well-trained man sees, hears, and handles a great deal more of the world than an untrained one. All things do him more good, not so much because he owns them as because he understands them. He always has good things to think about.

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

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THE INDUSTRIALIST.

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College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

WORLDLY SUCCESS.

BY PROF. O. E. OLIN.

THERE is something so brilliant in success that we are all attracted by it. There is a buoyant feeling that comes with the knowledge that you can do some one thing better than the majority of people can, which is a wonderful and healthful stimulant. I think many men in times of discouragement, temptation, and almost abandonment, have been able to retain their self-respect and their uprightness because they knew that they were of some use in the world—that they were successful in some way.

The desire to excel or to succeed in life is universal and necessary to all advancement. Nature and the world, and God himself, reward the industrious man only. The parable of the talents is as true in the physical world as in the moral. Nature withdraws her gifts from him who fails to use them and bestows them upon some one more appreciative. Striving for something—action, at least—is the law of life, and he who yields it puts himself at cross purposes with nature. We are coaxed and pulled and pushed toward success, but there is no place for laziness. The rewards are all for the workers. "Seest thou a man, diligent in his business? He shall stand before kings." The wisdom of Solomon drew sharp lines between the diligent and the slothful. The apostle exhorts us to be "diligent in business." All these things, and the fact that the world hardly ever forgives continuous failure, imply that to succeed is a duty of man, just and right. Is it true? Is it not the part of every man to reach the degree of success that will measure his full development?

I believe that the degree of worldly success that will test the full capabilities of a man is a proper object to set before the young; that the attainment of this is the sign that their powers have been properly developed. Of course, I mean honest success. And I believe that young men should know that none are doomed to failure. But they should be taught that success is the measure of a man; and he who attains it, does so by right of manhood. When, in pursuit of anticipated success, a young man correlates his forces and brings them all into action, he is doing the healthiest physical and mental work—a work, too, that reacts and re-reacts, making him broader and deeper and stronger.

While I have said that all may reach this goal of desire, I must say, too, that there are conditions that the material world will always insist upon. It needs no argument to convince us that we are both mind and body; and we need no explanation to understand the intimate relation of the two. The mind can work out its plans only by means of the body. If we live seventy years, we must still keep this same body and work by and through it. If the body, as any instrument, be defective, so will be the work. We know this, and yet we do not put proper stress upon it as an element of success. Rather by our inattention to it we make success impossible.

What would you think of a man, who had an intricate piece of machinery which he needed all his life, which he could not duplicate, and who would yet use it roughly, neglect to repair it, and leave it out in the storms of summer and winter? Of course you would say that he was at least foolish; and of course in so doing you would condemn yourselves.

Young people do not as a rule recognize how great a factor in material success the mere animal health of the body is. It sharpens the intellect, clears the judgment, strengthens the will, and puts energy and stamina in one, that enables him to make a great and sure endeavor. Nature seems to revenge herself upon those who despise the body by sometimes leading them in sight of success and then making them fail through the very element they despise. How many plans are half worked out, how many books half written, how many lives are fruitless, because men will not learn how to live!

It is worth ten years to form correct physical habits that cannot be lightly broken. We must know, too, that, in middle life, we cannot make radical changes in these with safety. We have had many notable examples of this. Men have found new surroundings, and have attempted to make violent changes only to meet defeat. State dinners killed Henry Wilson, Chester Arthur, and Justice Waite. I would have you remember that you cannot be careless with this vital element of your success—a sound body. It is possible to achieve success without this, but in rare instances only. Æsop, the dwarfed, hump-backed slave, gave us fables of wisdom that the world does not yet forget. A tallow candle is not a good thing with which to bore a hole; yet sufficient energy may be put behind it to drive it through a plank. A blind man may cultivate his hearing till he can tell with certainty the movements of his friends; he may cultivate touch till he can distinguish color and texture; but who doubts that he would do these with equal success and far greater ease having all his senses?

In these days of sharp competition no one can be assured of success unless he holds himself measurably at his best. Aladdin's lamp never existed outside the fairy land of imagination. All men must reach success that is really their own by the round of daily duties. They must show themselves fit for something before the world will entrust anything to them. The clerk who would be a merchant must develop business talents and the ability and fidelity to care for his employer's interests before the people are satisfied to give him any of his own. The man who would be a banker must convince the people of his financial capability before great sums will be deposited with him. And after the way is opened each of these must always hold himself to the level of his opportunities: he cannot let himself down at all. Not long ago, a firm doing a business of $15,000,000 a year failed after having stood for forty years. Every week banks and companies are failing because some official has forgotten for a moment his usual caution or judgment or uprightness. Eternal vigilance is said to be the price of liberty. It is no less the price of worldly success.

Right here it is well for every young man to emphasize in his mind the lesson that the signs of the times would teach him: that worldly endeavors, to be stable, must be honest. I mean material honesty—natural honesty, if you please; for nature is honest: she hates a liar, and gets him out of the way as soon as possible. Every one respects the merchant who at night can say, "There is not a dishonest dollar in my till;" and the banker who can count his gains and say, "This is all clean money;" and the farmer who, when he sells his produce or trades horses, gives value for value; and the student or laborer who honestly says "I slighted nothing today." The business world is crying aloud for such men, and it has a place for every one. No one, even in these feverish speculative days, can afford to pick up a dishonest dollar, for it brings with it a train of evils with which he must sometime wage a fight—perhaps a losing fight. The highest worldly wisdom is to stand on the rock of business honesty.

To be successful—to enter upon any undertaking, much more a life-long one—requires preparation. It will not do to trust in luck. There is no such thing. He who enters upon training for achievement must be patient enough to prepare himself thoroughly and honestly. He must leave no place for weakness when the strain of conflict comes. The mental faculties must be used in preparation till they are developed, rounded out, strengthened, and made fit instruments for the achievement of power. Then, with a well ordered body, an intellect keen, developed, alive to the world, achievement follows naturally.

And so I believe it entirely possible for all young people, rejoicing in their strength, if they are willing to pay the price, to move on to what the world calls success, and receive honor of men, and, I believe, if they win honestly, honor of the Father, too.

BENEFITS OF TEACHING DISTRICT SCHOOL.

BY M. V. HESTER, '94.

ASIDE from the pecuniary aid which teaching will afford almost immediately to the person who is financially embarrassed,—which thought alone forces many young persons to try it,—there are many other benefits to be derived from this occupation. The young or new teacher at once assumes an air of dignity, and is changed more or less from a boy to the position of a man. He feels a responsibility resting upon him, perhaps, as never before. Instead of going along, year after year, doing as others do, and constantly being led by those higher than himself, he must lead the younger ones around him.

And what a change this does generally make! It cannot but benefit any one to some extent at any rate. The thoughtless, careless, indifferent boy or girl in a short time becomes more thoughtful and careful, and assumes more comely manners and bearing.

The intellectual growth, too, is equally good. It affords an excellent review and study of the common branches. As the student, for instance, who has

been in college one, two, three, or even four years, goes into district school and presumes to teach grammar, history, and geography, he finds a great deal that he had long ago forgotten,—and possibly much that he had never learned,—and who cannot appreciate taking up the common branches, after years of vacation, perhaps, and studying them again?

The constant talking carried on for the most part by the teacher is not or may not be any small gain. True, it might be hard on the children; but the two-, five-, or ten-minute talks almost every day, and perhaps at different times during the day, may be very beneficial. They are talks on all the many miscellaneous subjects that come up in school work, and should be as beneficial for the pupils as for the teacher. If not, of course time need not be taken for them.

Again, what teacher who has any love at all for children does not become better by associating constantly with innocent, pure-minded children, and listening to the simple stories of the six-year-old child as he tells about his dogs and chickens and dolls and horses?

Notwithstanding the fact that teaching is not all sunshine,—for there are always sure to be some pupils who are mischievous and evilly inclined, and some parents sometimes presume a good deal,—yet the majority are not so, and teaching is perhaps as agreeable and recreative for a short time, at least, as any other line of work. Any person who has taught six, eight, or nine months, or longer, must be more amiable, patient, whole-souled afterward than before.

Altogether, I believe it is an experience which no well-disposed person ought to miss, considered from the teacher's standpoint alone.

GARDENING FOR CHILDREN.

BY JOSEPHINE C. HARPER.

WITH the return of spring comes the planting and sowing, either for the purpose of adding to the food productions of the country, or for the purpose of beautifying the landscape and thus adding to the pleasure and happiness of the family or community. The love of the beautiful is implanted in the heart of every human being, and it is the desire to gratify this sense of beauty that leads to the assisting of nature in the beautifying of the lawn or bit of ground about the dwellings. So every year flower beds are measured off, laid out, spaded, and seeded as the taste or fancy dictates.

In this yearly sowing of flower seeds and setting out of house plants, very little attention is, as a rule, given to the wishes of the small children of the family, if there be such. They are supposed not to be interested in flowers beyond taking care not to walk in a flower bed or pick any flowers without special permission. It is often difficult for a child to understand why it should not pick the beauties growing in profusion in the door yard. Would not a part, if not all, of this trouble be obviated by giving each child of the family a bed of its own, in which to plant its favorite flower? Teach the child the care of flowers the difference between a weed and a flowering plant, and the difference in the growth, shape, and color of the flowering plants themselves. The experiment of giving each child a bed of its own may develop some peculiar tastes of the youngster in the selection of the flower seeds to be planted, and may show a knowledge and observation of plant life which the child had never been even suspected of possessing.

One little fellow, having been told by his mother she would plant for him a bed of flowers, and asked what kind of seeds she should plant, surprised her by replying: "Four o'clocks, horse-radish, and that plant that looks like a rooster's comb." The mother explained that horse-radish was a vegetable, and not a plant usually placed in the yard among flowers. The boy thought a minute then said, "Well, I don't care, horse-radish has a pretty green wrinkly leaf and a flower on a stalk that gets to be a bush all over." He then appealed to the older sister for conformation of his views of the horse-radish blossom, and she was obliged to own that she did not know that the plant had a bloom at all. On being questioned, the boy gave a good description of the stalk, color, and shape of the flower, showing close observation of plant life. The mother wisely said nothing further on the subject, but went to a neighbor's and obtained a large root of horse-radish and planted it with the seeds in the bed as requested by her young son.

A few days after the planting the boy took a knife and dug up one side of the bed to see if the seeds had begun to grow. Then the mother explained to the child that the seeds must stay for a number of days in the snug bed of earth, and when they wakened there would be two tiny green leaves on top of the earth for every seed planted.

The patience acquired in waiting for the seed to grow, and learning that it must stay in the earth for some time before showing visible signs of life, are valuable lessons that will be of use all through life.

As the plants grow, bud, and bloom, new lessons will be learned, and that with keener zest and greater pleasure because the plants grow, bud, and bloom in his own bed.

Then there is the other lesson, the earlier learned in life the better: to respect the rights of others. He can do as he chooses with the plants and flowers in his own bed, and therefore it is just and right that he do not disturb those belonging to others.

The child with a flower bed of its own will be more interested in what is grown in the yard by other members of the family, and as a consequence take a greater interest in its home. Thus the tiny flower bed may prove to be the silken cord that binds the child closer to the home, adding pleasure and contentment to prosy every-day life.

THE USE OF THE FORGE ON THE FARM.

BY CHAS. R. HUTCHINGS, '94.

THERE is no farmer but has plows to sharpen, bolts to make, rods to weld or form, hooks to bend, tires to set, and many other of the thousand and one uses for forge and anvil. If he does not have these on his farm, he must spend from two to twelve hours in going to the nearest shop for each need of blacksmithing. Many times this trip must be made for a single bolt or nut of certain size, or to get a hook of certain shape, his machinery laying idle at home for want of it. I myself have been in the middle of the hay field with only a few acres of grass mowed, when snap!—whoa-a-a! I must go at least three miles to a blacksmith-shop (fortunate too, in being so near one) to have a pitman rod welded. As I near the shop a man drives in ahead of me with a two-hours job and I must wait my turn. After four or five hours loss of time I am ready to start again, but with the possibility of a poor job of welding which will break in less than half an hour. During this time the mower was not the only thing that had stopped, but the whole work of raking, stacking, etc., lost a corresponding amount of time.

This experience is, I believe, not uncommon. I am certain that the time saved to other work, when added to the blacksmith's bills, will justify one half the farmers of the State in buying a few of the common tools and doing their own work. They are not expensive, but, even if they required an investment of $50, the saving to most farmers in a year would make them profitable. Their elementary uses are not hard to learn. Any one can soon learn to keep a clean fire and do quite well the simpler problems in the work, which include practically all the farmer's blacksmithing. Then, too, the saving is not all in time going to and from the shop, nor in blacksmith's bills, but the old maxim that "a stitch in time saves nine" will apply especially here. Many a farm machine has been permanently injured by running with a loose bolt when fifteen minutes of time and another bolt would have prevented it all. If a forge and anvil were in every farmer's possession, his machinery could be made to last fifty per cent longer, and give better results while in use. Farm blacksmith outfits can be secured at prices from $15 upward and experience and observation lead to the belief that nothing will pay a farmer better.

The man who thinks any fool may farm is behind the age. A trifling dog is generally not half as trifling as the man who keeps him.—Some fellows kick a horse every time they enter the stall, and then wonder why it does not love them.—Prodigality is no sign of generosity.—If some men would hoe with as much devotion as they appear to pray they would not have so much complaint to make of hard times.—The man who will spend the most time, in the sowing season, talking politics, is generally the one who is the least account either to himself, his neighbors, or his government.—Do not let a cow run dry unless you really wish to curtail the milk yield. Feel that you can control the volume of her milk-secretion by the amount and character of her daily food.—*American Agriculturist.*

Every farmer should own a tool chest containing such tools as are necessary to perform the numerous odd jobs which constantly demand attention, and to which immediate attention should be given. A nail in time will often save a valuble article, a rivet, a full set of harness, and so on. In this connection we should say that quite an improvement is noticeable in the care bestowed upon implements and vehicles in general. This is as it should be, for prices of farm products are low, and these articles have to be paid for with hard-earned money.—*Farmers' Home.*

FARM NOTES FROM VARIOUS SOURCES.

No matter what the harvest may be, if the farm is poorer than it was before, it has been cultivated at a loss. The very first principle of a successful agriculture is the maintainance of the soil.—*Farmer's Home.*

It takes more time to recover from overwork than can be gained by it.—Learn all you can from others and do not depend entirely on your own experience.—The knowledge of a profession is never completed: neither is that of a farmer.—One year's seeding makes seven years' weeding.—*Home, Field, and Forum.*

The surest road to a fertile farm is by way of the barn-yard and the manure therein. The farmer who ignores this and depends upon chemical fertilizers for the making of his crops is not wise. They will not answer for the main dependence, although they are often valuble for supplementing the home-made supply.

It is a difficult matter to find farm help that will take as much interest in your success as you do in your own. Keep this in mind, remembering that it is only human nature, and however good your hands may be, look after the details of your work in person. Unless you do this you will be very apt to find some thing neglected.

There is no nuisance on the farm greater than a muddy barnyard. It is not possible to give stock any proper care when one must wade knee deep in mud to do it, nor are cattle well off when compelled to spend any portion of their time standing amid such filth. Stock keeping will always be unprofitable in such conditions.—*Farmer's Home.*

There are many fixed customs in agriculture that seem to be handed down from generation to generation as laws that must always be obeyed. Progress in agriculture is retarded by these customs, and even when facts show that former methods are erroneous there is resistance to the changes which are finally forced upon the unbelieving.

The chief difficulty in the successful growing of farm crops is not having the work in their cultivation well and seasonably done. This arises partly from a want of knowledge, but more from a disinclination to do it properly. An educated brain as well as a cultivated muscle is absolutely necessary to the highest success. Given the two, as the main factor and experience adds all else necessary to the "post graduate" course in practical agriculture.—*W. Marlatt, in Manhattan Nationalist.*

Farmers, as a rule, are apt to get too much frightened at the signs of an approaching panic. If we would all reason more, as the business men do, that the depression can not last long, and after it has passed away times will be better than before, we would save many anxious moments and live a happier life. Every branch of agriculture is subject to depression, but on the whole it is a good, sound and substantial business.—*Farmers' Home.*

It is not the work that drives the boys off the farm; it is the social isolation and the humdrum routine of their daily duties, unrelieved by relaxation of the wholesome amusements that every young nature craves. Let the boys make a business of farming, give them abundant opportunities for enjoying themselves by going to lectures, concerts, dramatic entertainments, and home sociables, and they won't hunger and thirst to an alarming extent for the excitement and pleasures of city life.—*Western Plowman.*

One of the chief benefits of living near an experiment station is in finding out what not to do, without having to learn it from a costly personal experience. We learn comparatively nothing from one man's success. It may be, in fact often is, only a lucky accident. We have unlearned a great many things that we previously thought we knew all about in this way. We are still a learner and should be glad to know a score of facts just now as to how to make the farm pay in the future, even as well as it has been made to pay in the past. A new departure is already needed in agriculture, to be in the front in the future as in the past.—*W. Marlatt, in Manhattan Nationalist.*

The idea of co-operative saving banks and loan associations, through which farmers may help each other to save and pay off their mortgages, is receiving attention of granges. The immense success of this system of co-operative saving and investment is but little known. Our judgment is that the money already held (invested) by these institutions in the United States far exceeds the millions deposited in the regular saving banks. Many thousands of workingmen have been able to pay for homes of their own through this system of monthly deposits and payments of interest and principal. This plan can be readily adapted to farmers' wants. Myrick's book, "How to Co-operate," gives a very good description of the system, by-laws of co-operative banks, etc., and a full list of the literature of the subject for those who want more information.—*Farm and Home.*

No man can equal a boy for going on his knees, or even lower, to hunt the borers in the apple trees, and the boy with his jack-knife and a piece of wire will fish out the grub much quicker than a man will. Then why not turn the orchard over to the boys and let them earn an honest penny, or many of them, by taking this care from the stooping old shoulders of the parents? The borers will have no rest and the trees will gain new life under the watchful eyes of the youngsters. It will be a good thing thus to give the boys an interest in the farm. They will have an income for themselves, and by spending it under the advice of their parents learn the value of money and the most economical way of spending it. And this acquisition will be worth far more to them than the money involved, for it will prepare the boys for the active business of life in good time and when impressions are so firmly fixed upon the mind as not to be easily effaced afterward.—*Baltimore Sun.*

Calendar.

1893-94.

Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.

1894-95.

Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Mrs. Francis of Oakland, California, is visiting at President Fairchild's.

Gertie Lyman, First-year, is kept from classes by an attack of diphtheria.

Prof. Georgeson addressed a Farmers' Institute at Minneapolis on Monday.

Mrs. M. W. Vandivert, of Bethany, Mo., is visiting her daughter Harriet, a student.

Mrs. E. J. Freeman, of Riley, is visiting her daughter Joanna of the Second-year Class.

Regent Secrest, Delpha Hoop, '91, S. N. Chaffee, '91, and several former students took part in an educational meeting held at Center Hill school house, March 12th.

Assistant Chemist Breese is reminded somewhat of his College days in "boarding 'round" during the absence of wife and baby. Mrs. Breese will probably be absent two months.

John Patten, Third-year, enjoyed a visit from his brother, E. B. Patten, and H. A. French, who came up from Silver Lake to attend the Webster Annual. They hope to enter College next year.

F. J. Smith, Third-year, was pleasantly surprised by a visit from his mother and sister Mrs. Aemisegger and Mrs. Roenigk, who came from Iwacura, Clay Co., to visit the College and attend the Webster Annual.

Professors Failyer and Mason attended the Irrigation Convention at Omaha, Wednesday and Thursday. They report an interesting meeting which will no doubt result in much good for irrigation, the only hope for the semi-arid regions of the West. The Convention favored a Government survey and the enlistment of private capital for the work.

The Third Division of the Class of '94 furnished the exercises in chapel Friday afternoon. After a selection by the orchestra, the following orations were delivered by the several members of the division: I. Jones, "Cause and Effect;" Lorena M. Helder, "A Retrospect of the Class of '94;" Stella V. Kimball, "Why the Chinese have not Advanced;" H. E. Moore, "Pauperism and Ignorance;" Mary E. Lyman, "Incinity;" D. E. Timbers, "Chief Causes of Anarchy;" S. R. Vincent, "Development of Civilization." The Mandolin quartette was a pleasant deviation from the ordinary music.

GRADUATES AND FORMER STUDENTS.

Maude Gardiner, '93, is visiting her sister, Mrs. Willard.

T. E. Lyon, '93, made a flying trip to Manhattan last week.

Cora Thackrey, student last term, visited the College Friday.

Alverta Cress, Fourth-year, is kept from classes on account of sickness.

H. A. Darnell, '92, came up from his school at Pavilion, Saturday, to attend the Webster Annual.

Mrs. Chas. Dewey-Earle, '93, and Mrs. Grant Dewey attended the chapel exercises Monday morning.

T. W. Morse, Third-year in 1892-3, came up from St. Marys Friday evening to attend the Webster Annual.

Fred G. Kimball, '87, now employed as mail agent between Oberlin, Kansas, and Hastings, Nebraska, visited the College Monday.

John J. Points, '67, and Alice E. Stewart-Points, '76, entertained Professors Failyer and Mason during their visit to Omaha this week.

On the program of the educational meeting held at May Day, March 7th, appear the names of Agnes Romick and C. J. Peterson, '93, Hannah Wetzig, Second-year in 1891-2, and C. E. Abell, student in 1891-2.

College students wanting employment for the summer should address P. W. Zeigler & Co., Box 1801, St. Louis, Mo., who offer great inducements for which students are well fitted, and which pays $75 to $150 per month.— *Adv.*

Notes from the College Farm.

The College has leased the Williston farm, which borders the College farm on the north. Since 1891 a portion of this place has been rented by the year, but the present lease includes all the farm and for a number of years. This year's addition is to be forty acres of tillable land and thirty-eight acres of prairie pasture. The pasture consists of rocky bluffs. The cultivated land is a red clay, varying considerably, and in some places might be called a clay loam. A stiff clay sub-soil underlies this and crops out in places in quite large patches which are almost impossible to plow and raise anything on. Several ravines run through the field, and the land is very foul with weeds. This year it will be put into crops for the herd.

Alfalfa seeding was done this week. It was "cross drilled" with the grain drill. Eighteen pounds of seed was put on to the acre. This was nicely done by the drill by mixing the seed with its bulk of wheat bran, and setting the drill to sow two and three-fourths pecks of wheat. Land-plaster was tried as a substitute for the bran, but it was too heavy and would pack and not drill out.

Field peas and oats grown together for feed will be tried this spring. One and a half bushels of each will be seeded to the acre. The seed will be mixed and drilled in.

Samuel Gardon, of Espanola, N. M., sends a sample of Mexican peas for trial here. He saysthey are much used by the natives of Mexico as coffee. The peas are very hard, and will probably have little value as stock food.

The fine growth of oats was nipped to the ground on the 23rd by a temperature of 12° below freezing. This will check the growth somewhat, but will not injure the plants if it does not stay cold too long. The ground is dry on top, so it does not freeze.

F. C. Burtis.

The Webster Exhibition

In spite of the wind and rain a large audience assembled Saturday evening to witness the twelfth annual exhibition of the Webster Society. Promptly at the given time the orchestra poured forth the strains of "La Serenata." After the invocation by Pres. Fairchild, Mr. E. A. Donaven gave the address, "The Dying Century." Mr. Donaven has a pleasing manner of delivery as well as something good to say, and he evidently knows how to hold the attention of his audience.

The quartette, Messrs. Smith, Patten, Cutler, and Cole, followed the address with the selection, "Tarpaulin Jacket," which they rendered in excellent style. The audience knew how to appreciate good music, and the quartette responded to a hearty encore with "The Mermaid."

The discussion, "Which has had the most influence on our civilization—Roman or Teuton?" was well handled by Messrs. J. V. Patten and F. J. Smith, both members of high standing in the Third-year Class. This was their first appearance before the public with original work, and showed that there will be some good rhetorical work done in the future.

Mr. Patten supported the Roman. This nation, after only a century of independence, is more perfectly civilized than any other. What influences caused this? First and foremost stands our law. Although essentially Teutonic, it is the result of Roman discipline, Roman energy, and the Christianity diffused by Rome. Rome was the generator of Teutonic activity. Our moral standard comes from the ancient Romans. Our social and moral purity is enhanced by their examples of truth, honor, and patriotism. To the Latin tongue, our language owes its power, its beauty, and refinement. The Saxon language without the Latin would be weak and tiresome. Lastly, Rome organized a savage world for our good. She protected religious and political growth that we might profit. She sacrificed herself to form a more perfect life.

Mr. Smith, the champion of the Teuton, said, in brief: In this discussion the Anglo-Saxon may serve as our guide, being the center of the Teutonic tribes, and also closely related to us both by influence and by blood. The gentleman has boastfully mentioned the lordship of Latin derivatives in our vocabulary; but we must bear in mind that the Anglo-Saxon is the most forcible and most plentiful element in our language. It is the element most used in the home, in literature, in all business transactions. The influence and place of Roman law in our government has likewise been mentioned. History teaches us that England's law (and from thence comes the basis of our system) is the result of progressive growth, and not of assimilation of Roman ideas. To this gift of law and language the Anglo-Saxons have added the spirit of freedom—freedom as we know it today. And we have also from them as a sacred heritage the love of home, wife, and mother—three things, the lack of veneration for which contributed much to the downfall of Rome. And, lastly, the Anglo-Saxons have given us our morality and religion—that religion which they rescued from the potentate of Rome, and that system of morals which has made it possible to rebuild what Rome hadd estroyed and to lay the foundation for permanent Christian states.

The Piano duet, "On the Race Course," by R. H. Brown and A. G. Bittman, was given in a lively and accurate manner, calling forth the appreciation of the listeners in hearty applause, which was responded to with the "Bicycle Polka." This was no less brilliant than the first.

John Stingley's oration on "The Physical Basis of Statesmanship" was well-written and well-rendered, and gave evidence of some time and hard work spent for the benefit of his hearers.

Has the large body no connection with the attainments of statesmen? Science teaches nothing plainer than the dual life of human beings. True it is, man is man only by virtue of blood. If every thought involves the death of an atom of brain, how can that loss be supplied except by the heart, which feeds and vitalizes it? And if the heart be diseased and depraved, the organs of thought must be touched with the same disease and depravity. Men have said, "Is there some one organ in this squarely-built, well-put-together body that gives him power by secretion? Has he a gland that would give us a bill to regulate immigration?" Certainly not! but that does not alter the fact that bill after bill has been lost on account of diseased secretion, and glands that refused to respond to the call to greater action.

The Chorus, "Moral Persuasion," which followed the oration, was given by a number of the Society boys in costume. The fact that the Websters have good singers in the Society was brought out here, and they reluctantly answered the applause with a little more "Persuasion."

The Reporter, with the motto, "Do not engage in matrimony unless you are a Senior," was read by Fred R. Jolly in a pleasing and distinct way. The paper was a good edition, full of good common sense, mixed with a little nonsense.

The quartette again appeared, this time with "Love's Old Sweet Song."

The last oration, "History of Liberty," by F. W. Ames, was interesting and instructive from beginning to end, and was given in the pleasing manner of the Webster boys. He said: The history of the past tells us, among other things, of the growth and decay of nations, the rise and fall of intellectual strength, and the degree of power acquired by industry, intelligence, and the executive ability of a people. But that history which inspires the soul and kindles the fire of devotion in the hearts of patriotic men and women is the history of those martyrs who have suffered, who have fought, and who have died, that the principles of liberty, justice, and humanity might be forever stamped on the governments of the earth. Unfulfilled were the hopes and plans of those ancient patriots and philosophers who toiled to estalish independence. At times the light of liberty shone brightly in their expectations. Its upward progress in the horizon of the future seemed fast approaching the zenith of freedom. But in a time of seeming prosperity we see, as an example, the once mighty Republic of Rome gradually decaying and in a few short years known only in history. What wonder that freedom and progress lay so long buried beneath despotic thrones! Liberty is indebted to Christopher Columbus for the discovery of a New World, one in which the laws, the customs, the traditions, and the impulses of the Old World could never be engrafted. From its shores there have gone out declarations of independence that have roused from their lethargy the monarchies of Europe. Happy will be the day when justice combined with obedience and liberty coupled with responsibility shall be universal in the realm of human activities; when neither title nor wealth can clothe its possessor with authority injurious to his fellow men. Happy will be the day when in a perfect sense we can say, "The Star spangled banner in triumph doth wave o'er the land of the free and the home of the brave."

Rollicking "Killarney," was sung by the quartette in Irish costume. They responded to the encore with a second stanza.

The program closed with the play, "The Old Camp," consisting of one scene. Here the soldiers were gathered in groups about the camp fire, playing cards and smoking their pipes of peace, while in the background the tents were pitched. The audience found much amusement in Mr. Royer, who took the part of "Germany" wanting to join the army; and the little "Afrikin," George Washington Cleveland Lewellyn Lease, as impersonated by E. H. Freeman. The scene aroused tender feelings as the soldiers sang the old song "Tenting on the Old Camp Ground," while the camp fire slowly died down. The whole program was complete and the climax reached when Deane Arnold sounded "Taps" and the curtain fell. The program from beginning to end was one long to be remembered, and one well worth the trouble and work it cost as well as the attention of the large number of people who attended it.

L. H.

Death of Hon. I. T. Goodnow.

Isaac T. Goodnow died suddenly Tuesday morning, March 20th. He retired the previous evening in his usual good health except for a slight cold contracted a day or two before during a visit to Abilene in attendance upon the Methodist Conference. Funeral services were held Thursday morning at the M. E. Church, conducted by Rev. E. H. Gill, assisted by Rev. A. S. Embree. Dr. Dearborn, President Quayle, of Baker University, and President Fairchild, of this College, paid tribute to the deceased in fitting words.

Mr. Goodnow was born in Whittingham, Vermont, January 17th, 1814. After fourteen years spent as student and instructor in Wilbraham Academy, near Springfield, Massachusetts, he was in 1848 called to the chair of Natural Science in Providence Seminary, East Greenwich, Rhode Island, where he remained seven years. In March, 1855, at the head of a colony of sturdy New England emigrants, he came to Kansas and aided in founding Manhattan; and in 1857, with the assistance of Joseph Denison, Washington Marlatt, and others, established the Bluemont Central College under the control of the Methodist Episcopal Church of Kansas, for which a charter was granted February 9th, 1858, and of which the corner stone was laid May 10th, 1859.

Upon the admission of Kansas as a State, January 29th, 1861, the founding of a State University became a probability, and the Trustees of Bluemont Collegle represented by Mr. Goodnow, were nearly successfu, in locating that institution at Manhattan by offering their building for this purpose. On March 1st, the measure passed both Houses of the Legislature, but met with a veto from Gov. Chas. Robinson, who was determined that the State University or the State

Capitol should go to Lawrence. A little over a year later, another chance presented itself for the College to become a State institution. When, on July 2nd, 1862, the "Agricultural College Act" was passed by Congress, the Trustees offered it once more to the Legislature, and this time the offer, consisting of one hundred acres of land, a plain three-story stone building, a library of several hundred volumes, and some illustrative apparatus, valued altogether at about twenty-five thousand dollars, was accepted.

Mr. Goodnow in 1862 was elected State Superintendent, and re-elected in 1864. In 1867, he was appointed Land Agent of the Agricultural College, holding the office until the re-organization of the College in 1873, having in the meantime been appointed in 1869 Land Commissioner of the Missouri, Kansas, and Texas Railway, which office he held for seven years.

Afer a busy, useful life for which the world is better, Mr. Goodnow had, for about fifteen years past, lived in the retirement of his home a short distance west of the College.

COLLEGE ORGANIZATIONS.

Student Editors.—Rena Helder, Stella Kimball, and G. L. Christensen.

Webster Society.—President, J. M. Williams; Vice-President, J. V. Patten; Recording Secretary, B. F. S. Royer; Corresponding Secretary, F. E. Uhl; Treasurer, A. C. Cutler; Critic, E. H. Freeman; Marshal, A. G. Bittman; Board of Directors, C. R. Pearson, E. H. Webster, E. L. Brockway, G. A. Dean, and R. P. Newman. Meets Saturday evenings at 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta.—President, Jennie R. Smith; Vice-President, J. C. Christensen; Recording Secretary, Elva L. Palmer; Corresponding Secretary, Geo. W. Fryhofer; Treasurer, Fannie Parkinson; Critic, Lucy Waters; Marshal, W. H. Phipps; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, G. L. Christensen, Stella Kimball, C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Ionian Society.—President, Phœbe Turner; Vice-President, Hortensia Harman; Recording Secretary, Minnie L. Copeland; Corresponding Secretary, Maggie A. Correll; Treasurer, Lynn Hartley; Critic, Mary Lyman; Marshal, Rena Helder; Board of Directors, Ethel Patten, Maud E. Kennett, Blanche E. Hayes. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Hamilton Society.—President, C. R. Hutchings; Vice-President, E. L. Frowe; Recording Secretary, C. N. Brobst; Corresponding Secretary, A. P. Carnahan; Critic, V. I. Sandt; Marshal, J. A. Hoge; Board of Directors, J. A. Scheel, B. W. Conrad, F. A. Dawley, F. Smith, C. S. Evans. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

March 16th.

The program of the Alpha Beta Society was opened by music, "Lullaby," rendered by trio of violins. Prayer was offered by Inez Palmer. Ida Banker gave a select reading, followed by a declamation by Hattie Paddleford. An essay by T. L. Jones on the subject of "Flying Machines" gave an account of numerous attempts that had been made toward the production of that machine. Debate on the question, "Resolved, that the United States should take an active part in the civilizing of Africa," was presented on the affirmative by J. C. Christensen and Lucy Ward. The term, "The Dark Continent," fitly expresses the condition of Africa, a large part of which is in a barbarous state. The civilized countries of the world should be willing to carry the light of civilization to those parts of the world where its influence has not been felt. Our own country is especially fitted for this purpose. We have a colored population, acquainted with our habits of life and thought, that would make the best of missionaries to carry our civilization to Africa where they would meet a people of kindred origin. A duty which the civilized countries owe to the world, is to civilize the uncivilized, and our country—the foremost in civilization—should not be backward in this beneficial work. The negative was presented by A. H. Morgan and Inez Palmer. We should civilize our own country. There is no need in going away from home when there is so much good that can be done here. We have a duty to perform at home. England has a crowded population and is better fitted to carry on the work than we are. It is not the policy of our nation to gain territory not adjoining ours. We have the African with us, and what we shall do with him, is one of the problems of the day. The Gleaner, published by the Third Division, was read by the Editor, M. G. Spalding. It was a good edition. Some of the principal articles were "A Description of Haskell Institute, at Lawrence," "Faculty Sports," "Whitville Ties," "A Curious Pin Cushion," "A Recipe for a College Social," and "The Ethics of Tobacco Smoking." Lorena Clemons delivered a well-written oration. There is nothing fixed in this world. Each day brings new duties, aspirations, and difficulties. Those who have gained wealth and distinction have had many difficulties to overcome. Strength of character comes from overcoming difficulties. Industry and hard work are the first things necessary to success. After recess, Misses Elva and Inez Palmer rendered a vocal duet, Nora Fryhofer accompanying on the organ. Extemporaneous speaking followed. N. E. Mills spoke about a visit to Blannerhassett island, where Aaron Burr made headquarters during his conspiracy. W. A. McCullough described the manufacture of plaster paris. E. A. Powell introduced the immigration question, which was afterwards freely discussed by members of the Society. After a vocal solo, "Love's Old Sweet Song," by Jennie R. Smith, the Society adjourned. J. C. C. Sec. Protem.

March 16th.

At the usual time, Pres. Turner called the Ionians to order. Opened by singing, Miss Farwell at the piano. Miss Patten led in devotion. Under installation of officers, Miss Corbett, as third member of the Board, and Eva Staley, as Corresponding Secretary, were installed. Miss Tennison was initiated, after which the Society listened to "The Watch on the Rhine," sung in German by Misses Louise and Minnie Sphor. Miss Gertie Stump read, in an interesting manner, a selection entitled, "How Mr. Man Missed the Train." Miss Mary Lyman sang "Alice, Where Art Thou?" with her usual sweetness. The question, "Resolved, that plagiarism should be more definitely defined in the rules of our State Colleges," was discussed on the affirmative by Olive Long and Myrtle Hood; on the negative by Joanna Freeman and Emma Doll. The affirmative argued that as all schools are trying to abolish plagiarism, it could not be given too prominent a place in our college rules. And if it were more definitely defined there would be no excuse behind which the offender could hide. The negative argued that if the word was more definitely defined, there would be nothing that might not be called plagiarism, for there is not a word, phrase, or expression that others have not used at some time. The Judges, Misses Harman and Newell and Mr. Creager, decided in favor of the affirmative. Misses Harman and Thompson favored the Society with a guitar duet. The high appreciation of it was shown by the hearty encore which they received. Miss Corbett, our phrenologist, appeared before us with a short but very interesting lecture; and by the aid of charts, which she had prepared for the occasion, convinced us that she "knew all about phrenology." A quartette, "Jack and Jill," by Misses Spohr, Lyman, Waugh, and Dill, closed the program. They responded to an encore with another of "Mother Goose's" melodies, "Little Tom Tinker." E. E. S.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

There are 175 more girls than boys enrolled in the Topeka schools.

Marion boasts of a 17-year old school boy who has not been absent or tardy for eight years.

Annie Wells, eight years old, was a pupil at the colored school at Leavenworth. Monday during recess she amused herself by "jumping the rope." She jumped 110 times, her playmates said. Then she went back into the school room, took her seat, and toppled over dead.

One of the handsomest educational exchanges that comes to our table is the Newton High School *Clarion*, edited by the pupils of the Newton high school. It is not an advertising circular headed by a few bad jokes and foolish gags like the majority of such papers. It contains articles worth reading.

At its December meeting, the Douglas County Teachers' Association required its members to respond with a word commonly mispronounced. The following words were named: Obligatory, business, inquiry, financier, insulated, water, Kansas, interesting, requested, route, mischievous, get, government, comparable, thither, food, Arctic, inventory, Italian, mustache, bronchitis, idea, Palestine, toward, Evangeline, vagaries, granary.

The Dickinson County *School and Home* gives the District school boards the following valuable advice: "When your school term closes, see that your teacher makes out duplicate term reports and have him mail one to the county superintendent. Visit your school on the last day and see whether your teacher has done his duty in caring for the apparatus and books of reference, have them carefully packed away for the summer, and in some cases, it would be well for a member of the board to take them to his home. Some member of the board should be made librarian during vacation in districts having school libraries, and should take the books to his home and give them out to the children during the summer, seeing to it, however, that no book is kept out longer than two weeks. Many trees will be planted this spring on school sites. Each Board should notify the County Superintendent of the number planted in their district so that he may be able to report the number to the commissioner of agriculture. If your teacher has given good satisfaction this year, try to secure the same one for next year. Of course you have no right to contract with a teacher before the annual meeting, but there may be a mutual understanding between the patrons of district and the teacher."

Hon. D. W. Wilder, the author of the "Annals of Kansas," offers the following pertinent thoughts on the results of the recent oratorical contests between the leading colleges of Kansas: "'How can men paint patriots who have not seen faces?' said Mormontel, the French author. That is the whole question. Men of genius like Shakespere, Keats, Emerson, produced great works in their youth. All other men, the race in general, are copyists. It is painful to attend a high school exhibition, academy or college. You know that the boys and girls have had no experience, have read very little, have not thought at all. To write and orate to the public should not be required of them. The teacher of the system puts these youths in the attitude of impostors. If skill in elocution is required, the children should be compelled to recite passages written by the best authors. If skill in writing is required, each pupil in a school or college should be given the same subject and asked to write, in his room alone, one hour, on that theme and sign his name to the paper. Those papers would have little value, but they would be honest. But even the good elocutionist and ready and rapid writer may not prove to be the man. Many a dull plodder now in our schools is a better man than the superior who is winning applause in these hot-house, unnatural, dishonest contests. The prize baby and the prize boy do not win in the race for life. Leaving out genius, the one man in a century—the best man and woman is always the quiet, earnest, honest, student and worker. This person, the king, is not heard of at all in these miserable, wretched, disgraceful 'college contests.' He may not be heard of until he has been out of college ten or twenty years. He makes no complaint, but he knows who is a humbug and who is not. But one boy is hardly more guilty than another. The system is wrong; the 'contests' should be given up. They are based on plagiarism."

Cheap Telephones in the Country.

In commenting on the expiration of a portion of the Bell telephone patents last week, it was predicted that it would be some years before the public generally felt the good effects. While this is undoubtedly true, the country generally, and the smaller towns and cities, where the Bell Telephone Company has not gobbled up everything in sight, and where the details of construction are not so difficult and expensive as in the larger cities will undoubtedly receive the benefit of the expiration of these patents at an early day. True, it will now be possible for business houses, factories, and the like, to have private wires, without being called to account by the telephone monopoly, and in this respect the larger cities will be benefited at once.

In the country, every farmer may have a telephone, connecting his house with that of several of his nearest neighbors, which will not only be a convenience, but will undoubtedly, through this closer connection, assist greatly in the suppression of crime in the rural districts. Hundreds of electrical manufacturing concerns all over the country are now prepared to supply receivers and transmitters, which any one can connect by means of wires; even the barb wire of fences, if properly put up, can be utilized in this way. The Bell Company is said to have put aside from its immense earnings during the past decade something like twelve million dollars, to be used in hindering the free use of the telephone; but the people have rights with which even money cannot interfere.—*Orange Judd Farmer.*

MANHATTAN ADVERTISEMENTS.

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DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

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PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

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SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

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Professor of Physiology and Veterinary Science
JULIUS T. WILLARD, M. Sc.,
Assistant Professor of Chemistry.
ALBERT S. HITCHCOCK, M. Sc.,
Professor of Botany.
SILAS C. MASON, M. Sc.,
Assistant Professor of Horticulture.
MISS JOSEPHINE C. HARPER,
Instructor in Mathematics
MISS ALICE RUPP,
Instructor in English.
HOWARD M. JONES, A. B.,
Rhetorical Instructor.

ASSISTANTS AND FOREMEN.

C. M. BREESE, M. Sc., Assistant in Chemistry.
JULIA R. PEARCE, B. Sc., Assistant Librarian.
B... SIE B. LITTLE, B. Sc., Assistant in Sewing.
GRACE M. CLARK, B. Sc., Stenographer in Executive Office.
F. C. SEARS, B. Sc., Foreman of Orchards and Gardens.
WM. BAXTER, Foreman of Greenhouses.
W. L. HOUSE, Foreman of Carpenter Shop.
E. HARROLD, Foreman of Iron Shop.
L. A. MCKEEN, Foreman of Farm.
C. A. GUNDAKER, Engineer.
A. C. MCCREARY, Janitor.

ASSISTANTS IN EXPERIMENT STATION.

F. A. MARLATT, B. Sc., Entomology.
F. C. BURTIS, B. Sc., Agriculture.
D. H. OTIS, B. Sc., Agriculture.
M. A. CARLETON, M. Sc., Botany.

College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

CHICAGO OR THE COUNTRY?

BY PROF. HOWARD M. JONES.

ANY theme can be harped on until it becomes positively painful. Perhaps it was more in exasperation than humor that Bob Burdette exclaimed, "Yes, I know 'how to keep the boy on the farm'—chain him with a log chain to a big oak stump, bore a hole through him with a two-inch auger and drive a long stake through his body (having taken the precaution to break both his legs), and then he will stay on the farm." A Chinaman makes it a part of his religion to care for the ancestral graveyard, but the American feels under no obligation to care for the ancestral farm. Each one of the farmer's three or four sons can with improved machinery till twice as many acres as his father did; then why should not the surplus boys go to Chicago? They have, and Chicago has a boy surplus. In the language of the Board of Trade, Chicago is "long" on boys. The many New England homesteads growing up to brush prove that the shrewd Yankees once bettered themselves in dollars by going to the city. The farmer's boy in a vague, partial way appreciated the value of "the perfume from 'meadows sweet with hay,'" also the worth of the "pastoral melody of 'tinkling bells, and ...owing kine'" and all that, but all these rural delights ...ere never allowed to interfere in a decision where cash was involved.

Historical society

To avoid the hackneyed and indefinite talk in general about country versus city, this disscussion will be limited to the relative earnings and living expenses of an unmarried young man in city and country as factors in his probable savings. I have chosen for my purpose twelve young men in Chicago with whom I associated more than a month during the summer of 1893. All had been teachers or college students—eight were college graduates. Their average age was about twenty-five years. Nearly all came from the country originally, Canada, New York, Pennsylvania, Ohio, Michigan, Iowa, and South Dakota being represented. These men, in experience and attainments, were above the average country youth starting for the city. They were intelligent, temperate, and but one used tobacco. As most of them were saving money for the continuance of professional studies, they were more than ordinarily frugal.

They were ushering in the World's Fair Congresses, held in the heart of the city. Fair-ground prices do not enter at all into my estimates. New York or Boston can make no better showing. Their work was light and pleasant, and their pay was $40 a month including room and four holidays. These were picked men, and their situation was far better than the ordinary country youth could hope to get unassisted, yet the verdict of these men, who had worked on farms, was that they could save as much in the country at $20 per month as in their Chicago situation at $40. As a matter of fact, they saved less in Chicago than they would have done by going onto the farm.

Perhaps the young farmer is still skeptical. The prospect of securing as much money in one day in the city as he can earn in two in the country is very alluring. Just here is where many a man who thinks of country prices and has country methods in mind is deceived. The country system and the city system of employment are entirely different.

The young farmer who helps his father or goes to work for one of his neighbors, receives his wages and in addition board, lodging, and washing, possibly mending, and when ill, nursing; in short, for the time being he is a member of the family. He may ride to church with the family, perhaps; he has a horse to use when necessary; he is considered the social equal of the sons and the daughters of his employer; the privileges and comforts of a good home are his.

How different the city system! An employer frequently does not know his employes when he sees them. One renders his service and the other pays the cash; here all relations cease. Instead of the privileges and comforts of a home, the young man is continually warned to "Keep off the grass." The son of the substantial farmer feels keenly his loss in relative social position and equality so dear to every American.

If the youth with longings for the city is still unconvinced, here are the items. The generous table of the well-to-do farmer cannot be furnished in Chicago for $3.50 a week. A comfortable, clean lodging will cost $1.50 a week; washing 50 cents a week. Inasmuch as city people live in one quarter and work in another there is car fare going to work and returning; to go out of an evening and get back means ten cents in car fare. A dollar a week is a moderate estimate for car fare:—

Board, 52 weeks at $3.50 per week	$182.00
Lodging " " " $1.50 " "	78.00
Car fare " " " $1.00 " "	52.00
Washing " " " $0.50 " "	26.00
Total living expenses in Chicago	$338.00

This large sum surprises the young unmarried man who has always lived in his father's home or that of some neighbor, but the city bachelor understands it. Add to the living expenses in the city the $20 per month, or $240 per year, that the farmer earns in addition to his living, and it is seen that $578 must be the annual income of the city man who wishes to live as well as he would have done on the farm. When the more expensive standard of dressing in the city and the increased cost of nursing and medical attendance, with other unforeseen contingences, are taken into consideration, it is only fair to say that an income of $600 in the city means no more for an unmarried man than $20 per month and "keep" in the country.

Just here the objection may be made that my city estimate is too high; that many laboring men support themselves and large families on an annual wage of $300. This is true. In a city are found the extreme ten-doallar-a-day palace hotels and saloons which give a free lunch with every glass of beer. But the extremes are out of place in this discussion. The men who sweep streets or work in the sewers and do such other menial work are largely Italians or other emigrants, whose standard of life is away below what the son of a comfortable farmer considers decent. Very cheap in the city often means very dirty.

The young man in city lodging has no neighbors, no home. He tries to make up for this lack by attending a club, the saloon, the theater, or the Y. M. C. A. as his taste may direct. Everywhere about him he sees wealth and waste. His artificial life calls for amusement which too often means dissipation. The tendency in the country is toward thrift, frugality; in the city, towards extravagance, prodigality. The city young man has fewer opportunities and incentives to save. He has a thousand more chances to spend. The city young man without family does not care to invest in life insurance, building associations, or annuities. His main chance is the savings bank. Many lay out their small surplus in tickets for the lottery or theater, possibly in poker chips and lager beer checks. On the other hand, the young man in the country also has the savings bank, and in addition he may become interested in a span of blooded colts, or some young stock, or machinery, and as his means accumulate, a few acres of fruit, or a piece of land. As a matter of fact, the majority of city wage earners, clerks or small salaried men, receiving from $9 to $15 per week, usually finish the year not much better than "even."

To sum up, the young man who can earn his living in a farmer's home and $20a month besides, will probably lose money by going to the city on an income of $600. But after having seen the city's poverty and filth, and inhaled its dust and smoke, and smelled its stenches, and listened to its maddening din, he will probably conclude that the value of dollars is no more real than that of "the perfume of meadows sweet with hay," or that of the "pastoral melody of tinkling bells and lowing kine."

WITH THE ARMY OF THE POTOMAC, JUNE, 1863. I.

BY PROF. H. G. CAVENAUGH,

[Captain 13th Infantry, U. S. A.]

IT is generally conceded that a nation or power that either voluntarily or by compulsion allows itself to be reduced to a purely defensive attitude, is certain to be compelled, sooner or later, to succumb. On the other hand, military history furnishes many illustrations of the marvelous results that may be accomplished by a nation, which forced to the defensive by the superiority of the assailant, is able at the opportune moment to assume the offensive, and to inflict blows as well as receive them.

Such was the principle of action early adopted by the Confederate leaders, and the bold and successful manner in which it was carried out on more than one occasion is given in nearly all the histories written on the subject.

It would seem that the authorities in Richmond thought an opportunity for a new and bolder offensive than had up to June, 1863, been attempted, now presented itself, and the reasons may be traced to the

fact that the Army of the Potomac had twice crossed the Rappahannock River, and on each occasion it had been driven back in disaster. I refer to the battles of Fredricksburg and Chancellorsville, the result of which had raised the morale of General Lee's army to the highest pitch, and had given the General himself a confidence that he had never felt before. The increase in the numbers of his army by the large force of conscripts, and of two divisions which had been held at Suffolk and along the James River, increased his confidence. Another incentive was the diminution of the Army of the Potomac by the mustering out of the men who had volunteered under the call of the President for two-year men, which reduced it to about eighty thousand effective men, and made less disproportion between the armies.

The authorities in Richmond, it would appear, were more influenced by the excited conditions of the army, generally, than by a just appreciation of their defensive policy; and to convert their offensive returns into repeated or out-and-out invasions, was to over-reach their true policy and enter upon enterprises which were uncertain, perilous, and costly.

The movement from the rear of Fredricksburg of General Lee's army commenced on the third of June, 1863. It was not generally known to us for several days later, when a rumor became current throughout the army that General Lee had marched several days before up the Shenandoah Valley to our right rear, and that Washington, the national Capital, was his objective.

We received orders on the 13th for marching. Our corps, the Second, was kept in front of Fredricksburg as a corps of observation, and if an opportunity arose, to threaten the right of Lee's army, which extended from Fredericksburg to Culpepper, its center, with its left at the mouth of the Shenandoah Valley, a distance of more than one hundred miles. All it would have required was a strong demonstration on our part to have flustrated and stopped the invasion into Pennsylvania at that time for the reason that it would have compelled Lee to protect his right flank, held only by General Hill's corps, which were the only troops between the Army of the Potomac and Richmond, the Confederate Capital. There were no troops to prevent a demonstration or intervening between his right and center which General Hooker, commanding the Army of the Potomac, wanted to do. He so responded to the authorities at Washington, but as was so often the case during the War of the Rebellion, the officials apparently had no confidence in the ability of officers in command, and the greater number of important recommendations or suggestions made by them were disapproved. Everything must be, and was, given up for the protection of the Capital, and there was no time but sufficient troops were in its immediate vicinity to hold in check any force that could attack it until the arrival of the Army of the Potomac. As usual, in answer to General Hooker, the same demand was made, that Washington must be covered. We being on the interior line, nothing could be done but await developments. The majority of the army was moved by short marches towards the Capital to confront Lee, the movement commencing on the 6th of June.

We were the last to break camp,and became the rear guard of the army. We spent several days fully equipped for marching at a moment's notice, and if there is anything hard, wearying, and irksome during active service it is to be in that uncertain condition; and there is scarcely any duty that is so monotonous to men.

About 9 o'clock P. M. on the 15th our share in the movement began. Our regiment filed out on the road, and we turned our faces northward. We were required to make several long halts during the first six to eight miles to give an opportunity for the different detachments which had been on picket duty to overtake us.

Sunrise on the 16th found us at Stafford Court House, the enemy close at hand and apparently in a pugnacious mood and inclined to contest our further progress without a skirmish to delay our march. An advantageous position was selected and line of battle formed, when the enemy did not then seem disposed to attack. The march was then resumed, but they had succeeded in making us—the rear guard—do just what they desired, that is, form line, and the consequent delay thereto. We went into camp at or near Aquia during the forenoon.

The 17th, we resumed the march, during the day were halted at Dumfrie's to replenish haversacks, after which we marched to Wolf Run Shoals on the Occoquan. It had been a hard day's work, and owing to the intense heat and dust, it proved a very exhausting one to the men. The energy of a great many gave way, and the number of stragglers was large in proportion to those who arrived in camp in apparently good condition. We remained in camp that day and the next to recuperate.

Read Farm Papers.

When asked to subscribe for a farm paper, the answer of some farmers is: "I know how to farm well enough now." It is not mere boasting. They are usually good farmers—have learned the trade where it can be learned to the best advantage—on the farm. They know how to raise good crops and good cattle; but do not seem to realize that reading a good farm paper will keep them posted about the new discoveries in agricultural science, the new inventions of agricultural machinery, and make them take greater interest in their employment, and more pride in doing everything well. One great benefit of a farm paper for farmers, says a correspondent of the *Country Gentleman*, is, it encourages the habit of reading and thinking, keeps their minds employed in their vocations, and gets them more and more in love with their business. No man ever became expert in any calling who was not continually striving to improve his methods. The old copy given to boys learning to write—

Every line, and every letter,
Strive to make a little better—

is as applicable to farming as to writing. No person ever became famous in the world who was satisfied with his present attainments. All great artists and authors have been severe critics of their own productions, and always strove to outdo themselves. If we go to the race-course, the great horses, if they would maintain their reputations, must continue to strive with desperate energy to beat their own records. The motto on the flag of the successful in any calling is "Excelsior!" The farmer who is satisfied with raising twenty bushels of wheat per acre will never raise any more than that, and in an unfavorable season not so much.

Other farmers say: "I take more papers now than I can read." When told that a farmer should read a farm paper whether he reads any other or not, the answer is: "My paper has a page devoted to farming." Tell them the articles in their paper are second hand, that rich city papers should be ashamed to pillage from agricultural journals, they will say: "Well, the matter is good; I don't care where they get it." It is possible that the "great" city papers may think they are doing the agricultural papers a kindness in copying from their pages, and that in giving proper credit, they are returning more than value received, by giving them such an extensive advertisement! It may be the agricultural papers are grateful for these forages on their property. If such is the case, all right; but my opinion is that the practice is wrong and hurtful to their interests. The country newspapers in general have hard work to make a living, and their pillaging might be tolerated on the ground of necessity, but the city papers which are rich, and boasting of there immense circulation, should have a proper pride, and no more borrow the agricultural articles from the farm papers than there presses and types.

The farmers who need an agricultural paper the most are the ones who do not farm as well as they know how. Like the sluggish race horse who needs the whip and spur to get out his greatest speed, most farmers need the seasonable hints, the timely reminders, and the intellectual lash which the agricultural journal is constantly flourishing over their heads. With good health, it is a pleasure to eat, to sleep, and to amuse ourselves. but these are pleasures we have in common with the brute creation; these are not the highest enjoyments of life. Our keenest delights are derived from the cultivation of the intellectual faculties and their proper exercise and employment. Without education and without books and papers, it is possible for a person to become a good practical farmer, and do his work as perfectly as a machine; but he thereby becomes a mere machine or beast of burden, with no more bodily comfort or intellectual enjoyment than his horse.

A good agricultural paper puts a farmer in direct intercourse and friendly relations with a large number of intelligent men engaged in the same occupation, and having the same interests, thoughts, and feelings as himself. It places him in the great assembly of the best farmers, experimenters, and thinkers in the world. It gives him a seat and a voice in the great agricultural congress, where questions of the highest interest to him are intelligently discussed and determined. It makes him proud of his occupation. It enlarges the powers of his mind by giving them abundant nourishment and healthy exercise. It brings him a grand intellactual feast with great regularity and at a small cost. It keeps him from becoming wholly engrossed in party politics or neighborhood controversies, by presenting subjects of greater interest and value for his contemplation.

Farmers as a class, and in proportion to their numbers, do not provide themselves with reading matter relating to their vocations, like professional men and those engaged in other callings. The lawyer takes the law journal, the doctor a medical review, the preacher his church organ, the merchant a commercial paper, and the miller and mechanic papers published in the interest of their particular business; but the great majority of farmers in the United States, satisfied with their present knowledge, unmindful of the wants of their own families, their own need of a mental development, do not take any farm paper. A little missionary work is needed on the part of those who believe in the value of agricultural literature to induce every farmer to become a subscriber to a good agricultural paper.—*Colman's Rural World.*

FARM NOTES FROM VARIOUS SOURCES.

There is no time lost in looking over the fence while the hogs feed. It is by close observation at feeding time that disorders are detected.—*The Cultivator.*

An exchange says: "When an animal is paying for its food you can see it." Perhaps so, but some of us are poor guessers, and it would be better to test the cow, so we shall not have to "guess" that the dairy has not paid. It is estimated that a cow giving a full flow of milk needs 70 per cent more food than is required for the maintenance of her body.—*Farmer's Review.*

In growing special crops a man must always have in mind something further than the mere successful cultivation of them. The business of finding the proper market and of disposing of them well has quite as much to do with the profit. With the specialist, quality should always be a first consideration, and he should endeavor to make his own name in connection with his products.

The work of a thoroughly progressive farmer includes not only agriculture proper, but stock-raising and horticulture. This fact by itself is enough to show that the farmer should be a liberally educated man. It requires a good deal of knowledge to handle properly all the things that come under these headings. The adage that "any fool can farm" is played out.—*Colman's Rural World.*

It is not hard work that wears our horses out before they have passed what should be half their period of usefulness, says an exchange, but poor care. You may have observed that race horses, barring accidents, are considered good when much past the time of life at which our farm horses are practically wor n out. The race horse is worked hard, but he has the best care intelligence and self-interest can give. The farmer seems to lose sight of self-interest too often in his treatment of his horses.

It is the quality of your flock more then its size upon which your profit will depend.—Increase the yield and reduce the cost of production, thereby increasing the profits.—When common horses get down to $100 per dozen in the markets it is a good warning to stop growing them.—Every sort of information that at all relates to your business is of value and you should neglect no opportunity to procure the same.—Do not think that the winter is a season for leisure only on the farm. When it is so regarded leisure becomes only another name for loafing.—*Mirror and Farmer.*

The farmer should by all means arrange his garden so that the horse and cltivator can be used, sensibly advises a writer in the *Massachusetts Ploughman.* This is one great reason, I think, way farmers are neglectful of the garden. It has been the time-honored custom with many to have the garden in a little corner near the house, perhaps in the midst of the apple and cherry trees, where it is not convenient to use the horse and cultivator, and where, too, the plants are shaded too much. In such conditions a garden can not be satisfactory, and the methods should be changed this year if it is possible to do so.

Grounds and Buildings.

The College grounds and buildings,occupying an elevation at the western limits of the city of Manhattan, and facing towards the city, are beautiful in location. The grounds include an irregular plat in the midst of a fine farm, with orchard, vineyard, and sample gardens attached, the whole being surrounded by a durable stone walls. The grounds are tastefully laid out and extensively planted, according to the design of a professional landscape gardener, while well-graveled drives and good walks lead to the various buildings. All of these are of the famed Manhattan limestone, of simple but neat styles of architecture, and admirably suited to their use. All recitation rooms are excellently lighted and ventilated, and are all heated by steam or hot water. A complete system of sewerage has been provided.

College, 152x250 feet in extreme dimensions, arranged in three distinct structures, with connecting corridors. This building contains, in its two stories and basement, offices, reception room, cloak rooms, studies, chapel, library, reading room, kitchen laboratory and dairy, sewing room, society rooms, printing office, and twelve class rooms.

Chemical Laboratory, one story, 26x90 and 46x75 feet of floor space, in form of a cross. It contains eight rooms, occupied by the Department of Chemistry and Mineralogy.

Mechanics' Hall, 30x103 feet, two stories, and 40x80 feet, one story, occupied by wood and iron shops music rooms,iron foundry, lumber rooms, etc., in addition.

Horticultural Hall, 32x80 feet, one story and cellar, having cabinet room, class room, and storage, with greenhouse attached.

Horticultural and Entomological Laboratory, with propagating houses attached.

Museum Building, 46x96 feet, and two stories high. This building, which has served many purposes, is now fitted for an armory, drill room, and veterinary laboratory below, and for class room and laboratory for Department of Botany and Museum of Natural History above.

Science Hall, containing the library, with ample reading rooms; class rooms and laboratories, and cabinet room for zoology, entomology, and botany; and suitable rooms for the various College societies.

Appropriation is also made for a central steam plant, to furnish heat and power for all the buildings. This plant is to cost $14,000, and will be completed in the fall of 1893.

The farm barn is a double but connected stone structure, 50x75 feet and 43x96 feet, with an addition of sheds and experimental pens 40x50 feet. A basement, having stables for 75 head of cattle, silos, engine room, and granaries, underlies the entire structure.

The horticultural barn is a stone building, containing storeroom, granary, and stables for several horses.

The foundries, lumber house, implement house, piggery, and various out-buildings are of wood.

Two stone dwellings, occupied by the President and the Professor of Agriculture.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Chas. Sandstrom, student, is visiting friends at Cleburne.

Josie Kimble, First-year, leaves College on account of ill-health.

Several students spend a day or two between terms at their homes.

Mrs. Kedzie entertained the Fourth-year Sewing Class Tuesday afternoon.

Clara Castle, Fourth-year, missed the Friday examinations on account of sickness.

F. E. Finley, Second-year, went to Marysville, Friday, to visit with relatives till Monday.

J. B. Kimball, First-year, drops out of classes at the end of the Winter Term to begin spring work.

W. O. Staver, Fourth-year, was compelled to miss classes the first of the week on account of sickness.

Ada and Bertha Ingman, First-year students, were called home last week by the death of their brother.

Dr. J. H. Trego, of Mound City, spent a couple of days in the city with his daughter Martha, First-year.

Professor Hougham, formerly Professor of Agriculture at this College, is lying dangerously ill of pneumonia.

The Cooking Class made an assortment of cream candies Friday which was pronounced strictly first grade by competent judges.

John Amnell, E. Shellenbaum, and J. J. Fryhofer, students, went up to Randolph yesterday to visit at their homes for a day or two.

Mrs. Kedzie was at home to the Fourth-years, Wednesday. She was assisted by Miss Harper and a couple of the Post-graduates.

A fine specimen Richardson's merlin has been added to the Museum. It was taken by Dr. Mayo on the College grounds. It is a rare visitant here.

The election, in chapel last Wednesday morning, of student editors for the Spring Term resulted in the choice of Belle Frisbie, E. L. Frowe, and Phœbe Turner.

The Fourth-year Class loses another member in S. R. Vincent, who was called by telegram on Tuesday to save his claim in Oklahoma, presumably from a "jumper."

Miss Lillie Stebbins and Mr. Pearl Stebbins of Newton, on their way home from Union College Neb., paid a visit to the College Friday morning in company of Henrietta and Jephthah Evans, students.

The base ball season opened yesterday with a game between the Second-years and a picked nine from the Fourth-year and Third-year classes, resulting in victory for the former by a score of eight to seven.

Examination paper was put up in a new form this term, being a booklet of eight pages, the sheets being the same width but only half the length of those formerly used. The new form is more convenient and more economical than the old.

The Veterinary Museum has received from Dr. C. A. Cary, of the Agricultural and Mechanical College of Alabama, some fine specimens showing ostro-porosis, or "big head" of the horse, a disease characterized by an enlarged and porous condition of the bones.

The following is an excerpt from a letter by the Principal of a Kansas High School to Prof. Hood. It explains itself. "The blackboard compasses you made for us came yesterday. My class is delighted with them. I have a class of ten in geometry and twenty in geometrical drawing: I suggest you advertise in the *Western School Journal* that you have dividers for work in geometry and drawing. Those Superintendents now sending to Chicago will prefer to send to you."

Supt. L. C. Wooster of the State educational exhibit in the Liberal Arts Building at the Columbian Exposition says the following with regard to the exhibits made by the State Agricultural College and the State Normal School: "The products of manual skill, including drawing and work in wood, monopolized nearly half of the space given to education in the department of Liberal Arts. Our few pieces of wood and clay work from the public schools of Kansas, though well executed; our large proportion of drawings from flat copy; our lonely pieces of school-made apparatus; and, excepting our paper relief maps, our weak showing in working and illustrative material, all would have been in sad contrast with nearly every other State exhibit had it not been for the splendid exhibits in these lines made by our State Agricultural College and our State Normal School. Visitors from various other States engaged in similar work assured me that our Agricultural College exhibit was the finest of its class in the Department of Liberal Arts; and one of the judges, a lady who had served in one capacity or another in five national expositions, told me and also the representative of the Oswego Normal School of the State of New York that our Normal School exhibit was the finest made at Chicago by any normal school of the United States."

GRADUATES AND FORMER STUDENTS.

E. C. Pfuetze, '92, visited College, Friday.

Jack Harrison, '88, visited the home folks the first of the week.

Fannie Waugh, '91, will take post-graduate studies at the College this Spring.

Elsie Crump, Third-year in 1892-3, visited College, Tuesday. She expects to enter classes next week.

Belle B. Thompson, student in 1892, attended chapel exercises Friday morning. She expects to attend College next term.

Ernest Mudge, Third-year in '91, came up from Eskridge for a short visit, attended chapel exercises, Thursday morning.

John Hartley, '92, is at home, having finished a year's teaching in Wabaunsee County. He attended chapel exercises Monday morning.

Martha Harbord, former student, who has been teaching in Waubaunsee County, re-enters classes at the beginning of the Spring Term.

E. S. Mudge, Third-year in 1892, had a day's vacation from his surveying duties and used it to call upon acquaintances at the College yesterday.

Kate Pierce, Third-year in 1892-3, Principal of the Winfield (Iowa) schools for the past year, returns to College this spring to complete her course.

B. F. Sears, First-year in 1890, now a student of the State University, visited his brother, F. C. Sears, Thursday, who accompanied him home for a short visit.

Ben Skinner, '92, last week read a paper, "First Steps in Natural Science," before the Teachers' Association at Sebetha. The Fairview *Enterprise* prints the address in full.

I. B. Parker, '92, and wife visited classes at College, Tuesday, on their return from Kansas City, where Mr. Parker has just graduated from the Medical University. They will locate in Hill City.

A. F. Niemoller, '93, on his way to the State University to take a course in pedagogy, stopped to greet old friends at the College, Monday. Mr. Niemoller has just completed a term of school in south Dickinson County.

H. M. Cottrell, '84, is responsible for the arrangement of the large new barn on Levi P. Morton's farm at Ellerslie on the Hudson. It is almost a duplicate of the barn which, it will be remembered, was burned several months ago.

New Bulletins.

Three new bulletins from the Experiment Station are just from the press, and ready for mailing free to residents of the State. Titles and brief summaries are printed below:—

EXPERIMENTS WITH OATS.

Bulletin No. 42 describes the experiments of Prof. Georgeson with oats. To briefly summarize a few of the results, it may be stated that they favor:—

As to preparation of land, spring plowing.

As to time of seeding, early. March 8th, the first sowing, gave better results than those of any subsequent date.

As to hot-water treatment for smut, favored, averaging three bushels per acre better yield than without treatment.

As to grading seed for sowing, best average results obtained from heaviest seed.

As to method of seeding, best results followed use of shoe drill with press wheels.

As to amount of seed per acre, best results were from heavy seeding—four bushels per acre giving every year larger crops than any smaller amount, but two bushels and two and a half gave good yields.

In the test of varieties, "Pedigree Rust Proof" gave the best yield. This was followed by "Board of Trade," "Belgium," "Brown Winter," "Welsh," "Golden Sheaf," and "Whiteside," each of which averaged for three years above forty bushels per acre. Twenty-seven other varieties ranged from 39.99 down to 31.52 bushels per acre average for the three years.

SORGHUM, AND SUGAR BEETS.

Bulletin No. 43, upon sorghum and sugar beet experiments in 1893, is now ready. The work upon sorghum has been much as in previous years, the principal efforts being directed toward improvement of a few of the better varieties. The extent of the improvement in six years is exhibited in a table. The best single stalk in 1888 gave 14.18 per cent of cane sugar. The same variety in 1893 gave in one instance 19.85 per cent of cane sugar. Some of this improvement is probably due to acclimation, but an important factor has undoubtedly been the scientific selection of seed by analysis of the juice of many individual cases. Experiments with fertilizers have been continued. Some of these appear to increase the yield per acre, but none can be said to improve the quality of the cane. Lime is injurious in all respects, decreasing the yield and the per cent of sugar. Experiments were also made to see if the density of the juice was affected much by evaporation from the leaves during the day, thus making juice from sorghum cut late in the day apparently richer than that from cane cut early. The results obtained did not support that view.

Upon sugar beets, comparatively little was done, as most of the plats planned for were in the western part of the State, and the earlY drouth entirely thwarted any success that might have been obtained otherwise.

FURTHER STUDY OF NATIVE GRAPES.

The above is the title of Bulletin No. 44, from the Horticultural Department. The hundred varieties under trial are classified, and their hardiness, quality of fruit, liability to disease, and comparative earliness given. Numerous tables explain the whole, and a study of them will repay the horticulturist for the time thus spent.

Fourth-year Party.

In response to a cordial invitation, the members of the Fourth-year Class met at the home of Mr. A. S. Houghton, Friday evening, and from there went to the pleasant home of Mr. and Mrs. Cress, intent upon surprising their classmates, Misses Verta and Fannie. The girls, returning from town about eight o'clock, were indeed surprised to find the house had been taken, so to speak, which clearly shows that the Fourth-years are capable of keeping a secret. The evening was pleasantly spent in games and other amusements, with conversation interspersed. One of the most novel and amusing incidents of the evening was the attempt of the gentlemen of the Class to put a pillow into a case in 15 seconds. The one doing it in the neatest and quickest manner, and the one doing it the poorest were awarded prizes. Mr. Pearson received the first, while Mr. Secrest captured the booby. Next, six of the young ladies were given lead pencils to sharpen. Miss Frisbie was awarded the first prize for doing it best in the shortest time. Miss Dial was given the booby prize.

Later in the evening cards were fastened to the back of each person present, each card containing a number—the ladies and gentlemen corresponding—and in this way each received a partner for lunch. The amusing part of this was that on each card was the name of some person. The name of each member of the Faculty and the assistants appeared with others, as, Gov. Lewelling, Mrs. Lease, Helen Ingalls, etc. The person wearing the card was to find out whose name it contained simply by asking questions, no one being allowed to tell the names. Numerous other games were indulged in. Later in the evening delicious refreshments were served, consisting of sandwiches, salad, nuts, oranges, bananas, ice cream and cake. Each member received a handsome souvenir, on which was printed in gold letters the Class motto and the name of each member.

The evening passed all too quickly, and at a late hour the Class reluctantly departed, pronouncing Mr. and Mrs. Cress royal entertainers, and feeling that the party was one long to be remembered among the pleasant recollections of the Class of '94.

COLLEGE ORGANIZATIONS.

March 24th.

The Webster Society was called to order at the usual time by Vice-President Patten. An unusual number of absences, recorded at roll-call, due no doubt, to the early opening hour at this season. E. H. Webster led the Society in devotion. After reading of the minutes the following question was debated: "Resolved, that the statutes of Kansas, in regard to the establishment of County High Schools should be amended so as to read 'Shall establish' in place of 'may establish.'" E. R. Farwell and W. T. Pope affirmed, and C. R. Pearson and R. W. Bishoff negated the question. The affirmative said: the High School is the stepping-stone to most colleges, and should therefore be established in every county. By so doing, a much larger percentage of farmer's sons and daughters would be enabled to obtain a moderate education who wonld otherwise not receive a drill beyond the common school. In the high school a desire for a college education would likely be acquired; the people would take a greater interest in the cause of education, and the social standard of the country would be raised. Considering the advantages to be gained, the expenses of establishing and maintenance would be small. The negative admitted that the law might exist without serious difficulty in the eastern and even central parts of the State, but said that in the undeveloped western section, serious obstacles were to be overcome; the people could not stand the expense of establishing High Schools, and the equipment would necessarily be meager; this College and the various normal schools of the State, where advantages are greater, could be attended with about the same expense as at a high school. Further, the right to establish High Schools is granted by the statutes; this is sufficient; it should not be compulsory. The Society decided that the affirmative had presented the best argument. The Second-year's favorite poem, "The Beleagured City," was next recited by F. Rummel. G. A. Dean, in an oration, enlarged the affirmative of the question, "Is the Orator's Success Due to Nature?" The composition showed much thought and was well delivered. G. G. Moore, music committee, introduced Con Buck, who favored the Society with several selections on the guitar. After recess, two live questions were subjects of discussion, the first "Is Universal Peace Probable?" was presented by J. Amnell, and the second, "The Rise and Fall of the Populist Party," was introduced by T. M. Robertson. The Critic closed the program of the evening by a re-

port, which, as usual was full and to the point. C. F. Pfuetze, an honorary member, was among the visitors of the evening. He responded to calls for a speech by both compliment and criticism.

F. E. U.

March 23rd.

At the usual hour, the Ionians, and quite a number of visitors were called to order by President Turner. After the opening hymn, Ada Rice led in devotion. The roll was then called to which a very few members failed to respond. Misses May Moore, Hope Brady, and Nellie Burtner were then received as members. The program, which proved to be a very interesting one, was opened by a piano solo, "Warbling at Eve," by Phœbe Turner. The next feature of the program was a parliamentary quiz, by Minnie Pincomb. This proved that the Ionians are not in deplorable darkness, as to "Roberts Rules of Order." We admit, however, that there is room for improvement. Edith Lantz then presented a spicy edition of he Oracle, having for a motto, "*Frigide diesest, quum religuumer.*" This was followed by Ada Zimmerman's declamation, "The Pastor's Vacation," which contained a lesson worthy of our notice. It showed us that the evil places of amusement are always open, but that when our pastor is allowed a short vacation, the church is closed, and the meetings there cease. The Society was then favored by an instrumental duet, "The Chop Stick Waltz," by Misses Farwell and Rhodes. The discussion, "Are examinations a true test of scholarship?" was opened and well discussed by Minnie Spohr. The argument was well founded, and illustrated. Examinations of some kind were deemed necessary in all professions, though the process of cramming too often precedes them, and all is forgotten soon after. Misses Patten, Chellas, Lyman, and Kennett also expressed their views on the subject. A book-review by Lynn Hartley followed. Her subject was, "The New Schoolma'am," a story which is very interesting, and as "All's well that ends well," we are at rest, though the heroine had a series of narrow escapes. The program was closed by the well rendered variations of "Home Sweet Home," by Fannie Hacker.

M. J. P., Sec'y protem.

March 24th.

More than the usual number of members and visitors had assembled when, at the usual hour, President Hutchings called to order the last Winter term session of the Hamilton Society. After roll-call, and prayer by E. O. Farrar, an interesting program was opened by an essay by J. V. Goodsheller, entitled, "An Incident in McPherson; an account of a Populist political rally." G. C. Hall followed with a discussion, setting forth the "Causes and Evils of Strikes." C. S. Pope gave the oration of the evening on the question of "Pauper Immigration." Although an old subject, Mr. Pope brought some new points on it, leaving no doubt in the minds of the audience where he stood on the question. W. H. Painter read a humorous selection from Cooper, entitled "The Bashful Man." Mr. Noble's declamation, "On the Death of Colonel Crockett," was appreciated by all, as far as he spoke, but owing to an unfortunate slip of memory, he was unable to finish it. The debate on the question, "Will the proposed new course of study be a great improvement over the old," was championed on the affirmative by F. E. Smith and M. L. Heckert, and on the negative by A. L. Peter and A. C. Smith. The affirmative claimed that placing botany and physics earlier in the course and weeding out or shortening the time for less important studies would be greatly to the advantage of the student, who takes but a partial course. The Faculty have endeavored, ever since the College was organized, to arrange the course of study so that all can get the most possible good from it, and that in the new course the later studies are better adjusted to the time of the student. The negative held that changing botany to a Fall term study greatly diminished the practical benefits to be obtained from field work, that the Faculty themselves were divided on which were the less important studies as well as to the advisability of rearrangement of the old ones. They claimed that, this being an agricultural college, no less time should be spent in the study of natural sciences, to make room for mathematics. The Society decided in favor of the new course. R. K. Farrar presented an excellent edition of the Society paper, the Recorder. The program was closed by a guitar and harmonica duet by Conrad and Pope. The latter half of the session was devoted to business and extemporaneous speaking.

W. H. P. Secy., protem.

Fifty years ago we knew nothing about fungous diseases of grains and fruits. which of late years have proved so disastrous. Insects caused little trouble then, but every fruit grower of the present time gives much thought to preventing their ravages. Fifty years ago one could tickle the earth with a hoe and she would laugh with a harvest, but now it requires the highest cultivation and heavy fertilization to produce a profitable crop. The conditions which now confront the farmer are much changed, and to successfully meet them and overcome the new obstacles to success, a greater learning is required.—*Colman's Rural World.*

Every newspaper man has at some time in his business experience met the man who now takes more papers than he can read. He was in town last week. He paid 25 cents for an almanac, wiped his nose on an awning, tried to blow out an electric light at the hotel, failed to light his cigar on it, put a nickel in the slot at the post-office and kicked because the mail didn't appear, wanted to lick the cashier of the bank because it closed at 4 o'clock, and watched the sign over one of the jewelry stores looking for it to strike.—*Bill Nye.*

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The State Normal School will begin its spring term April 10th. New classes will then be formed in nearly all stndents.

The Kansas Medical College at Topeka held its annual commencement last week. Chief Justice Horton delivered the diplomas to seven graduates.

Judge Otis D. Swan of Emporia, for many years a member of the Board of Trustees of Emporia College, and an active friend of higher education, died of apoplexy, last Monday, at his residence.

The Junction City schools were closed one day last week to enable the teachers to visit schools in neighboring towns. Six of the teachers went to Clay Center, two to visit the Dickinson county High School at Chapman, two went to Salina, seven to Abilene, three to Emporia, and one to Manhattan.

Several members of the Faculty of the State Normal School have made arangements to open a summer school for teachers. It will open June 15th and continue for 10 weeks. The tuition will be $10 for one study and $3 for each additional study. A course of evening lectures is in contemplation. For further information, address Prof. M. A. Bailey, Emporia, Kas.

The Seniors of the Kansas State University have decided to contribute from $3 to $10 each toward a fund to assist poor students. The money will come out of the commencement fund. This action is a most commendable one. It shows that the class of '94 have "their hearts like their heads at the proper place." In no other way could these students better show their affection for their alma mater. Such a fund carefully husbanded and added to by successive graduating classes will grow in time into a great and substantial benefaction and a noble help to seekers after the advantages of the University.

The Kansas Academy of Language and Literature holds its session for 1894 at Washburn College in Topeka, on the 12th, 13th, and 14th of April. An interesting and valuable program has been arranged. Attention has been given to classifying the discussions presented into language productions, original work, critical reviews, and methods of culture. In the language section of the programme, a paper will be presented by Miss Carrie M. Watson on "Bibliography of Kansas," Mr. Joseph G. Waters will recite a dialect poem, Prof. W. H. Carruth will continue his "Dialect Notes," and Mr. William C. Campbell will read a dialect sketch. In the department devoted to original work, more latitude has been given. Mrs. A. D. Gray will read a story; Miss Florence L. Snow, a poem; Prof. A. G. Canfield, a sketch of "Kansas Literary Clubs," and Mr. C. M. Harger, a story. Under the section of critical reviews, Mr. Robert Hay will discuss the "Faust Legend," Miss Viola V. Price, the "Growth of the Arthurian Legend." The Rev. F. L. Blayney will present some views upon a psychological subject; Miss Florence Reasoner, a "Study of Matthew Arnold;" Mrs. H. G. Toler, a critical review, title not yet announced. In the consideration of method of culture, Prof. F. W. Blackmar presents the plan and accomplishment of "University Extensisn;" Pres. W. A. Quayle, the subject of "College Reading," and the founder of the Chautauqua movement, Bishop John H. Vincent, will deliver an address upon "Out of School Culture." On the evening of Dr. Vincent's address, Washburn College and the literary clubs of Topeka tender a reception to the members of the Academy in the College Library. Visiting members will be entertained during their stay by the friends in Topeka. They should write to H. G. Larimer in advance that entertainment may be provided.

General Duties and Privileges.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturday, and no student may be absent without excuse. Unexcused absences are taken into account in calculating grades. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance and scholarship shows to each student his standing in the College.

Chapel exercises occupy 15 minutes before the meeting of classes each morning, and unnecessary absence from them is noted. On Sunday no services are held in the chapel, but students are urgently advised to attend the different churches of the city.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the Third- and Fourth-year Classes. Once a week all the classes meet, in their class rooms, for exercises in elocution and correct expression.

There are four prosperous literary societies which meet weekly in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the second and fourth Friday evenings of each month.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College, and a union meeting on the first Friday evening of each month.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greetings find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

Short Lecture Course for Farmers.

Beginning on the first Tuesday of February each winter, a two-weeks course of lectures is given on agriculture and related arts and sciences. This is provided for those farmers and others who cannot take up the fuller work of the regular College classes. Members of the Faculty are assisted in delivering these lectures by prominent farmers, stock raisers, and fruit growers of the State; and full discussions of the topics presented bring out the varied experiences of those attending. This course, during the winter of 1893, was attended by about 40 farmers.

MANHATTAN ADVERTISEMENTS.

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All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

WITH THE ARMY OF THE POTOMAC. II.

BY PROF. H. G. CAVENAUGH,
[Captain 13th Infantry, U. S. A.]

JUNE 19th.—Marched to Sangster's Station, on the Orange and Alexandria Railroad.

June 20th.—Marched to Centerville, via Fairfax Court House.

June 21st.—To Gainesville, over the battle-field of Bull Run to Thoroughfare Gap, where we remained several days, as usual, covering Washington and awaiting developments. While here, however, we were not entirely inactive, for the enemy's cavalry was very energetic, and continually harassing us, to prevent our crossing the Potomac River and following Lee north into Pennsylvania, where part of his cavalry force had been for several days with his advance infantry corps, about to cross, which it did on this date.

We resumed the march on the 25th, which took us through Sudley to Grem Springs, where we arrived early the following morning, after an all-night march, guarding the wagon trains. Such marches are very tiresome and wearing upon men, not on account of the distance traveled, so much as the repeated delays, loss of sleep, and the slow movements of trains. After a few hours rest we continued the march (other troops having relieved us of the train) and arrived in the afternoon at Edward's Ferry on the Potomac River and crossed to the north side; on the 27th marched through Poolville to Barnsville, Md; 28th, through Sugarloaf Mountain enroute to Monocacy Junction, the dust being so thick during part of this day's march that troops in column of fours could not see the men in their immediate front. I would not believe this statement had I not seen it. The army concentrated at Frederick City on this day, and it was here we learned that General Hooker had, at his own request, been relieved from command of the Army of the Potomac, and there is no doubt but that the rank and file thought and felt it a very unfortunate occurrence, or necessity, at this particular time, as Hooker was very popular with the men, and they had great confidence in him as a fighter. He was known to them as "Fighting Joe Hooker."

General George Meade was placed in command, and although he was generally known to the army and recognized as a very good man, and much respected, he was not a popular officer, and his qualities as a commanding General were yet undeveloped. It was felt to be poor policy to "swap horses while crossing a stream," as President Lincoln aptly put it. Results proved that he was equal to the emergency, but not to so complete a success as could have been wished. I might here very appropriately say that the President, in placing General Meade in command, said, "You are authorized to remove from command, to send from your army, any officer or other person you may deem proper, and to appoint to command as you may deem expedient; in fine, you are entrusted with all the power and authority which the President, the Secretary of War, or the General-in-chief can confer on you, and you may rely upon our full support." This, to allow General Meade full sway to make untrammeled the best dispositions possible in the emergency. Had General Hooker been treated in the same manner, and have been given the same assurance of non-interference, he would not have asked to be relieved. One of the principal causes of his request was that General Halleck, then Commander-in-chief, would not listen to, hear of, nor permit a body of troops, consisting of ten thousand men, stationed at Harper's Ferry, being placed under his (Hooker's) command for the purpose, as he urged, of using them, with other troops, to threaten the rear and act directly against the line of retreat of the Confederate Army, at the same time preserving his own line of communications. General Meade disapproved all movements against the Confederates' line of communication, and ordered the troops from Harper's Ferry to Frederick City under command of Gen. French, as a reserve to the Army of the Potomac—this in the face of the fact that Gen. Hooker had just been relieved from command for asking or demanding authority to use them.

It will be remembered that Lee had been moving north for some days, and at this time his cavalry was within four miles of Harrisburg, the capital of Pennsylvania, with a division of infantry (about 10,000 men) in support at Columbia, with another cavalry force at Wrightsville, fourteen miles south on the Susquehanna River, with a division of infantry at York, also, one at Carlisle—the remaining troops of his army at Chambersburg and Fairfield, northwest of Gettysburg.

General Lee was much surprised to hear from a farmer, on the 28th, that the Army of the Potomac was at Frederick City and in the passes of South Mountain, which are west of said city. He saw at once that his communications, about which he was so solicitous, were greatly endangered by the Army of the Potomac, formed to interpose between him and Virginia. He at once changed his plans and concluded to march on Baltimore instead of Harrisburg, as this would necessarily make the Army of the Potomac march further to the east to front him and relieve his rear in the Cumberland Valley. His advanced troops were ordered to concentrate at Gettysburg, which brought them from the north-east, north, and west. The troops of General Meade were marching north, and the battle of Gettysburg was fought by the accidental meeting of the two armies.

A THREE-ACRE FARM.

BY SUPT. J. S. C. THOMPSON.

THE observant reader knows that the day of "bonanza" farming is about past for the very good reason that, conducted even on such an enormous scale, with expenses reduced to the minimum, it cannot, or has not in late years of low prices for wheat, been made to pay more than a fair rate of interest on the investment. The non-resident capitalists are seeking other investments, and the big wheat farms of the northwest are therefore being divided and divided again into small tracts owned and tilled by residents. The country is naturally the gainer by the change.

This may certainly be taken as a sign of the times in the farming world; and it is evident from the lively discussion of the subject in the agricultural journals, that intensive farming is coming in the West as it has in the East. Made necessary in the East by changed conditions, it has proved a success from the start; and the western farmer who scatters his energies over a half section, and wears out his eighty-acre outfit thereon, and whose only effort in "mixed husbandry" lies in the injudicious admixture of cockleburs with his corn and sandburs with his hay, may well profit by the experience of his old-style, non-progressive brother of the East, and drop into the rut that leads out.

The following account of the management of a three-acre farm is interesting as a study of methods. The writer, Mr. J. M. H. Fredrick, thus describes the work in the *American Agriculturist:*—

"A notable illustration of what may be accomplished at a comparatively small cost from a small acreage is presented in the very successful experiment performed by Mr. J. B. Borst, of Greentown, O., the owner and manager of what is claimed to be the largest celery farm under a single control in the United States. His home, however, is on what he is pleased to call his 'Three-Acre Farm.' From these three acres, he modestly says, he believes he secures quite as good returns as do some farmers from ten times the acreage, and that, too, with an expenditure of labor which amounts to little more than that required by ordinary morning and evening chores. One of the three acres is occupied by the home, the outbuildings, the poultry yard, vegetable and fruit garden. From the remaining two acres three Jerseys are fed from the time clover is large enough to cut in May until vegetation stops growing in the fall; and at times a considerable surplus is fed to the horses and hogs. Every fall one plot of two-thirds of an acre is seeded to wheat. This supplies a family of four with bread during the year. In the spring the remaining two plots of the two-acre tract—each two-thirds of an acre—are in clover, one giving its first year's crop and the other its second. The latter is cut first, and from it the cows are daily supplied with fresh, green food. When this plot has been gone over once, and the cutting of the second plot has commenced, the mowed patch is covered well with a compost of muck from the celery farm and with stable manure, and at once plowed. This is not later than the middle of June, and the plot is sowed to corn. By the time the the second red clover patch has been cut the first time, the new crop at the side first mowed is again ready.

"The last of August the corn is right for feeding. From this, three horses and the hogs, as well as the cows, are fed until the ground is again cleared, about the middle of September. After giving it a dressing of the compost, winter wheat is planted. In the spring the wheat plot is seeded to clover, and by the time the sowed corn has all been fed the young clover has attained a strong growth. Besides providing food

which is greatly relished by the stock, the fall cutting of the young clover frees the ground from the wheat stubble, which if left until the following season would be mouldy, and therefore injurious to the feeding qualities of the clover. By this plan of soiling, Mr. Borst claims a superior quality of butter is made. The clean clover and pure water cause a longer, more abundant, and more wholesome flow of milk than is possible with cows which are given the run of large pastures, pestered by flies in summer, grazing close for grass which has been tramped under foot, and quenching their thirst at slimy pools of stagnant water.

"On the acre of land on which the house and other buildings are located, there are fruits of many varieties, an abundant garden, and a poultry yard in which nearly one hundred chickens and over a dozen ducks run—and all this without marring the beauty of the home, for the smoothly mowed lawn about the comfortable farm house is dotted with well-kept ornamental shrubs, and roses and other flowers in profusion. From the dairy, the poultry, the garden, and the orchard, says Mr. Borst, the family of four is provided with all the necessaries of life, save the single one of wearing apparel; and quite often there is a very considerable surplus."

SHE NEVER WASTES ANYTHING.

BY MARY E. COTTRELL, '91.

THE opposite of wasting is saving; either extreme may become a mania with people otherwise well balanced. It is a matter of great pride with many that they are not guilty of the sin of wastefulness. The old proverb, "Keep a thing seven years, turn it and keep it seven years more, and you will find a use for it," is to them a summing up of much wisdom.

No problem in economics is so interesting to them as that of preserving the utility of an article, which is evidently nearing the end of its usefulness. A person possessed of an intense desire to save remnants, will spend an hour or more in mending some old article of tinware which could be replaced at a cost of a few cents; another will take an afternoon to contrive some way of fastening together the worn-out parts of an old machine, which is ready to fall in pieces when put to use; another will manage to do without some necessity, and feel that in so doing she has accomplished a great saving; still another victim of the mania can never feel content to pass a pin lying on the ground, but must pick it up, even though there is a probability that the pin was last used in opening the ulcerous sore of some careless person. Disease laden, or not, it must be picked up in order to bring that good luck which comes by saving. And, if the truth were known, would not the great majority of people find that they are inclined to save to the extreme edge in one thing or in another?

It is a fine art to prepare a dainty dish of food from the fragments of several others. But there is a point beyond which exercise of this art ceases to be a virtue. Ptomaines may mean nothing to one; fermentation or "working" of foods may seem a matter of indifference; mold may be considered as one of the unavoidable consequences of having an over supply of food. But let such a one make a lunch of chicken pie in which the poison is well developed, or dine on beans that are in such a state of activity that they should be thrown away, and the eater will experience the effects of poisoning whether she knows what is the matter with her or not.

One may become accustomed to the taste of moldy food, but a steady diet of such articles, or even an occasional feast on the scraps, will never be conducive to good health. Strong spices, or even the beneficial onion, may be used to cover up the odor of spoiled food, but the natural effects are not destroyed by these means. Though all the scraps are served in various ways so that there is no waste in the pantry, this saving is worse than loss. Many times the evil spirit with which the small boy or girl seems possessed could be traced directly back to the poison in food last eaten. When the small boy just before retiring goes through that process commonly known as "eating to save" his favorite article of food, it is small wonder that the early morning meal finds him cross, irritable, and out of sorts generally. It usually takes all day for him to recover, and it is woe to the family, as well as misery to the boy, if the process is allowed to be continued at each meal. The idea that if you eat pork you will be possessed of evil spirits has a shadow of truth in it. The evil spirit in the well-known narrative took possession of certain swine—"And their name was legion." What shall be said of these others?

It is a skillful woman who can make old clothes look as well as new. But if the possessor of a much worn garment, spends more time in remodeling her old dress than it would take her to earn and make a new one, there is room for question as to what she is saving by so great an outlay of time, strength, and patience.

When year after year generous contributions are added to the store of odds and ends in the garret, and many remnants become moth-eaten or faded before anyone remembers where they are; when the housekeeper has visions of disease germs thriving in dust-covered bundles, she may well doubt whether the value of the entire collection equals the rent of storage room. Not until she realizes that collecting is not always saving; not until she learns what is really worth saving, and the best way of using that which she has saved, may it be truly said of her that she never wastes anything.

LEGISLATION IN REGARD TO INJURIOUS INSECTS.

BY BERTHA KIMBALL, '90.

FARMERS and fruit-growers are constantly reminded of the enormous loss which they sustain every year from the attacks of injurious insects, and are urged to make every effort to lessen the damage done, especially by the use of insecticides.

Prof. James Fletcher stated before the Association of Economic Entomologists, at Washington, D. C., that about one-tenth of the agricultural products of the United States is lost through the attacks of injurious insects, making altogether a sum of $380,000,000.

The saving of some part of this vast amount has occupied and still occupies the attention of hundreds of economic entomologists. Great beneficial results have already been obtained by spraying, and the use in this way of kerosene emulsion and arsenical mixtures has been of untold value in holding in check the depredations of various injurious insects which infest our orchards and vineyards.

But the great difficulty to be overcome is the fact, so self-evident, that for every man who sprays his orchard there are a hundred men who give their orchards no attention. Many are too ignorant of the value of spraying, many others do not care, and the good done by the few who interest themselves in this subject counts for naught. It seems wrong that all the work and care given by one man shall be useless because of the negligence of his neighbor.

It has been proposed that legislation be called to aid in the extermination of some of the worst of the insect pests, but until more interest in such a work can be awakened little good in this way can be accomplished. If laws could be so framed that all would be compelled to exercise the same care, great benefit would result and millions of dollars be saved. In California, Massachusetts, and New Jersey, laws for this purpose have been enacted and a penalty fixed for those who break them. California's legislation is for those who grow citrus fruits, Massachuetts legislates against the Gypsy moth, while New Jersey's laws cover a still broader field, making it "the duty of every agriculturist, gardener, farmer, and nurseryman, or other cultivator of the soil, to adopt and apply from time to time, in the proper seasons therefore, such methods for the destruction of insects injurious to growing crops and fruits of all kinds, as are, and may be prescribed in the reports and bulletins of the Agricultural Experiment Stations in this State." A fine of not less than $25 or more than $100 is provided for those who, when notified by the Commissioners (three men appointed by the State Board of Agriculture), do not within six days obey the directions given them.

With the enactment and strict enforcement of such a law in every State in the Union, we may well imagine the last larva of the codling moth dying of arsenical poisoning, and others of our most injurious insects so lessened in numbers that the injury and loss caused by their attacks will be as nothing compared with the harm done at present, while no one can doubt that for the extra care necessary to exterminate these pests every farmer will be well paid in better and larger quantities of fruit and grain.

The Boys and the Farm.

A great deal is being said about keeping boys on the farm, just as if they were a lot of refractory colts which required constant watching to keep from breaking through the fence and scampering away to the city. It seems to be a great cause of regret at Farmers' Institutes and provokes many pages of lamentations not found in Jeremiah. Editors grow regretful as well as eloquent, at the proneness of American youth to leave the stately mansions of their fathers, and hie them away to the hovels of the city. They dilate upon the fact as if it were one of the most impenetrable mysteries of the age, when probably that self-same editor did exactly the same thing when he was a boy.

Did not Horace Greeley leave the farm? He might just as well have done so sooner, for he was of no use whatever on it, and every American has been very glad that he did. Not worth his board in the country, his work was invaluable at the desk in the *Tribune* office. William H. Vanderbilt left the country. He was a success as a Long Island farmer, yet evidently his place was not there. Boys leave the farm? The only wonder is that more of them don't leave it. Did anyone ever hear of a lot of lawyers getting together and with long faces regret that all their sons did not come to read Blackstone? Neither do the members of other professions plead with the boys to stay with them. Do we ever hear of city people expostulating with the youngsters for going to the country? There seems to be no occasion for it. Some one has said, "If you want your boy to stay on the farm, don't bear on too hard while he turns the grindstone."

A boy gave as his reason for leaving the country that he was tired of working all day and doing chores all night. Some men work the boys all of the sixteen hours of daylight and two more besides, then wonder why they get as far away from them as they can. Such men always expect the boys to use the dullest tools and plow with the old mares, while the father drives the match team to town; expect him to wear cowhide boots, plow as long as he can see, then feed the pigs and calves after dark; expect him to haul hay and manure in summer, and saw-logs all winter; expect him to milk 16 cows by the light of a smoky lantern, and go to bed at the top of the house, some time before morning; doses him with castor oil, and magnanimously lets him go fishing once in two years.

If a boy wants to leave the farm, there is something wrong either with the farm or the boy. If with the farm, the sooner it is remedied the better. If with the boy, he will find it out himself some day, and go back. Don't expect your boy to do the work of more than three men. Don't give him a calf or a pig, and when he has raised it, sell it and put the money by for taxes or the preacher's salary. Don't give him a piece of land to cultivate for himself, and take the proceeds to send to the heathen, or he may conclude one of them already has it. Does he have apples to eat in winter, and strawberries and cream in the summer? He will not always find them in the city. Does he have a pony to ride, and a road cart? He will miss them when he goes away, and also his mother's cooking. Does he have all these, and still wants to go? Why then, bless you, let him. He will see the contrast, if there is one, and come to his own conclusion; and I give you my word for it, it will be the right one.
—*T. E. Goodrich, in Orange Judd Farmer.*

Knowledge is Acquired.

All knowledge is acquired. By nature man knows nothing. He always inherits qualities, but knowledge, never. For this all have to dig and delve. An aptitude for the acquisiton of knowledge, as an aptitude for the acquisition for wealth, may be inherited; but the knowledge of the father or the mother is not transmitted by birth. One may be the most exalted scientist of his day and to all questions of that character be able to give an answer, but with all his knowledge, all his science, and all his skill, he cannot convey to his son or daughter by birth one particle of information.

Until the invention of the printing press accurate knowledge was disseminated, as a rule, by word of mouth only. The art of writing was known only to the few, and the ability to convey information by the symbols of language limited to a small percentage of the people. The printing press made books and newspapers possible, and the people of today have but a meager idea of what they of five hundred years ago did without them. The knowledge of the father might have been conveyed to his children; his ignorance certainly was. So it is today where reading is not practiced, and where books and newspapers are unknown.

Labor and Earnings.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour's daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their ability and means.

All labor at the College is under the direction of the superintendents of the department, and offers opportunities for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with the services rendered, from 8 to 10 cents an hour. The superintendents strive to adjust their work to the necessities of students and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay roll for the past year ranges from $250 to $400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses.

The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Maud Waugh visited classes at the College, Friday.

E. M. Fairchild writes that he is located in Troy, N. Y.

The proceedings of the Board will be published next week.

An interesting budget of farm notes by Mr. Burtis is held over for a week.

Mr. and Mrs. L. Hawkinson, of Randolph, were at College on Wednesday.

Mrs. J. G. McKeen, of College Hill, attended the Chapel exercises Friday afternoon.

S. R. Vincent, Fourth-year, is back from Oklahoma, and will again take up his studies.

Arnold Emch, Post-Graduate, has just completed a handsome wash drawing of Science Hall.

Rufus and Eva Philbrook, Second-years, are enjoying a visit from their mother, Mrs. F. M. Philbrook, of Chepstow.

The hedge west of the steam plant has just been closely trimmed, giving the English sparrow pest one less abiding place.

Mr. and Mrs. H. H. Barr of Escanawba, Michigan, in company of Mrs. W. P. Higinbotham, looked over the College grounds and buildings on Monday.

Several students were compelled to drop out at the end of the term to attend to home duties, but nearly all the vacancies thus made in the ranks have been filled by returning old students.

The Farm Department yesterday shipped ten of the "experimental" steers to Kansas City, and at the same time marketed twenty-three fine hogs. Assistant Burtis chaperoned the stuff.

G. C. Hall, a Second-year student at the College, has made a retouching frame for C. N. Livings at Moffett's gallery, that is very pretty. It is of solid walnut, perfectly joined, and illustrates the thorough instruction given and the pains taken in making it. —*Mercury.*

Rev. E. T. Gadd, of Cotner University, Lincoln, Neb., in company of Mr. T. L. Owens, of Great Bend, made the tour of the College departments on Monday last. They expressed great interest in the College and its work, and a general approval of the Kansas way of doing things.

The Alpha Beta Society yesterday elected the following officers for the Spring term: Stella V. Kimball, President; W. H. Phipps, Vice-president; J. E. Taylor, Recording Secretary; Lucy Waters, Corresponding Secretary; O. H. Halstead, Treasurer; Sadie Moore, Critic, and Inez Manchester, Marshal.

The Ionian Society elected the following officers yesterday: President, Belle Frisbie; Vice-President, Rena Helder; Recording Secretary, Martha Harbord; Corresponding Secretary, Miriam Swingle; Treasurer, Louise Spohr; Critic, Kate Pierce; Marshal, Gertie Lyman; Board of Directors—Ethel Patten, Maud E. Kennett, and Florence Corbett.

The young ladies of the Cooking Class "practiced" on the assembled Regents and Faculty on Wednesday evening last, to the entire satisfaction of all. In fact, the young ladies exceeded their previous efforts in both quantity and quality of the good things provided, and the members of the Faculty broke the record of the year in the difficult duties assigned to them. The occasion was rendered especially enjoyable by the after-dinner speeches by the Regents, in which the two new members, Messrs. Hoffman and Goodyear, were perfectly at home.

Members of the Third Division of the Third-year Class entertained the chapel audience yesterday afternoon with orations as follows: "Advice to Young America," Laura McKeen; "Galileo," E. R. Farwell; "A Vision" (Declamation), John Harman; "Americans and Recreation," Elva Palmer; "Athletic Contests," R. K. Farrar; "Is Secrecy a Crime?" L. W. Hayes; "The Professions," G. W. Fryhofer; A Fallen Barrier," E. H. Freeman; "True Aristocracy," Dora Thompson; "College Deceit," O. H. Halstead. A selection by the College Orchestra opened the exercises, and a piano solo, "Fresh Life," by Nora Fryhofer, gave a pleasing variation in the middle of the program.

The death of John S. Hougham, which occurred March 31st, from pneumonia, takes another from the rapidly diminishing list of the pioneers in this College. Mr. Hougham was born at Connersville, Ind., May 28, 1821. He served the College from 1866 to 1869 as Professor of Agricultural Science; during 1870 as Professor of Agricultural and Commercial Science, and for the next two years as Professor of Agricultural Chemistry, Mechanic Arts, and Commercial Science. In 1872, he accepted the chair of Natural Philosophy and Agricultural Chemistry in Purdue University, La Fayette, Ind., where he remained until 1876, since which time he had lived at his home, a short distance west of this College. The funeral service was conducted at the residence by Rev. Mr. Riley, of the Baptist Church, assisted by Prof. J. H. Lee, the deceased's collaborator for the six years of his service here. A quartette, led by Prof. Brown, furnished music. The funeral was largely attended.

GRADUATES AND FORMER STUDENTS.

E. J. Hartzler, student last year, re-enters College this term. His school near Riley closed last week.

K. C. Davis, '91, has been re-elected Principal of the Austin (Minn.) High School at a comfortable increase of salary.

Lora Waters, '88, and Elsie Waters, Second-year, are enjoying a visit from their brother S. A. Waters, a former student.

C. J. Peterson, '93, having finished a successful year of teaching at May Day, called at the College on Monday to visit friends.

Mr. P. Ipsen and daughter, Signa, of Mariadahl, and Miss Lizzie Bickhart, student in 1889, were visitors at College on Tuesday.

C. A. Murphy, '87, Superintendent of Schools, Kingman, writes that his sister, Nellie J. Murphy, '85, is a compositor in the South Denver *Eye* newspaper office, where she has been for four years past.

L. S. Strickler, Third-year student in 1890-91, in requesting his paper changed from Los Angeles to Klinefelter, Cal., says he is "located in a stamp mill on the great Colorado desert, eleven miles west of The Needles, where hens lay hard-boiled eggs."

Horticultural Notes.

The cold weather proved to be too much for a few of the earlier sorts of apples and plums. The later sorts seem to be all right, and, indeed, many of the plums are already in full bloom. So far as can be ascertained, the cherries are all right.

The young peach trees, which were laid down last fall, have been uncovered and set upright again. Notwithstanding the unfavorable weather, many of the trees have a fair number of blossom buds on them, and barring hail-storms, small boys, and a few such uncertain quantities, the College ought to have at least a sample of several sorts of peaches. Each tree is supported by two or more pieces of twine fastened to stakes driven into the ground. Ordinary binding-twine will do, though wool twine is better. Two guys, on the side opposite to that toward which the tree was laid down, are usually sufficient, though occasionally one from the other side is necessary. Care should be taken to tramp the soil firmly about the roots of the tree after it is set up.

The dwarf pears promise to have a considerable number of blossoms, except on some of the earliest. Whether this means pears or not is another question. The entire mulching of straw is being removed from the strawberry bed and the rows thoroughly raked with a steel garden rake to remove the old leaves, which contain spores of the "strawberry leaf spot." The rows will then be sprayed and the bed cultivated till nearly time for the fruit to ripen, when a light mulching of straw will be put on that part of the bed which is in bearing. In removing the mulching, the straw was raked into windrows with a sulky rake and hauled off with a hay-rack.

The whole and piece-root grafts, set the spring of '93, have been dug. Notes will now be taken on the different lots; samples selected, photographed, and saved for specimens; and the trees then reset in another part of the grounds. It was found necessary to do this to economize ground, as some of the lots, more especially those on inch and a quarter stocks, contained more vacancies than anything else.

F. C. SEARS.

The Weather For March.

Temperature.—The mean temperature for March, 1894, was 46.04°, which is 5.6° above normal. There have been but seven warmer Marches in the past thirty-seven years, the extremes being 50.89° in 1860, and 24.58° in 1867. The maximum temperature was 86°, on the 17th; the minimum, 8°, on the 26th—a monthly range of 78°. This maximum was equalled in '63, and exceeded one degree in '68 and '93. The greatest range for one day was 49°, on the 9th, and 16th; the least range, 11°, on the 19th and 24th. The warmest day was the 17th, with a mean of 68°; the coldest, the 25th, with a mean of 18°. The mean of the observations at 7 A. M. was 37.32°; at 2 P. M., 58.45°; at 9 P. M., 44.19°. The mean of the maximum was 62.10°; of the minimum, 32.48°—the mean of these two being 47.29°. The mean of the first ten days was 48.28°; of the second ten days, 54.50°; of the last eleven days, 36.32°. The warm temperature of the first part of the month, ending on the 23rd, started the early blossoms, cherries, plums, and apricots, so that the cold temperature, which followed, seriously injured, if not entirely destroyed them.

Barometer.—The mean pressure for the month was 28.85 inches, which is .07 inch above normal. The maximum pressure was 29.476 inches, at 7 A. M. on the 26th; the minimum, 28.32 inches, at 2 P. M. on the 17th—a monthly range of 1.156 inches.

Rainfall.—The total rainfall was .67 inch, which is .63 inch below normal. Rain fell in measurable quantities on the 4th, 7th, 17th-18th, and 20th. The total rainfall this year has been 2.48 inches, which is .94 inch below normal.

Cloudiness.—There were three days entirely cloudy, three two-thirds cloudy, one one-half cloudy, five one-third cloudy, three one-sixth cloudy, and sixteen entirely clear. The per cent of cloudiness was 25, which is 20 below normal.

Wind.—The wind was from the north and south twenty-four times, east ten times, southeast and southwest nine times, west and northwest six times, northeast twice, and a calm three times at the hours of observation.

The total miles of wind was 11147, which is the highest for the six years. This gives a mean daily velocity of 359.58 miles and a mean hourly velocity of 14.98 miles. The maximum daily velocity was 683 miles, on the 17th. Other high daily velocities were 648 miles, on the 3rd and 10th; 672 miles on the 22nd; 616 miles, on the 30th. The minimum daily velocity was 132 miles, on the 26th. The maximum hourly velocity was 45 miles, from five to six P. M. on the 17th.

There was a faint yellow aurora on the evening of the 30th.

Below will be found a comparison with the preceding Marches:—

March.	*Number of rains.*	*Rain in inches.*	*Prevailing Wind.*	*Mean Temperature.*	*Maximum Temperature.*	*Minimum Temperature.*	*Mean Barometer.*	*Maximum Barometer.*	*Minimum Barometer.*
1858	5	2.02	.....	47.12	82	10	.....	.....	.....
1859	6	2.88	SW	45.95	74	29	.....	.....	.....
1860	0	.00	SW	50.89	81	24	.....	.....	.....
1861	0	.00	SW	41.20	79	20	.....	.....	.....
1862	0	.00	NW	37.27	85	8	.....	.....	.....
1863	0	.00	N	45.77	86	20	.....	.....	.....
1864	5	2.12	NW	38.21	68	19	.....	.....	.....
1865	6	2.27	NW	38.21	74	-8	.....	.....	.....
1866	....	.....	.....	.....	.....	...	.....	.....	.....
1867	4	.63	N	24.58	52	-9	.....	.....	.....
1868	5	.93	NW	47.88	87	19	.....	.....	.....
1869	4	1.06	NE	35.24	72	-2	28.80	29.30	28.30
1870	5	1.45	NW	34.82	68	0	28.69	29.15	28.20
1871	4	1.02	NW	46.92	83	22	.....	.....	.....
1872	5	.92	NE	37.34	73	18	.....	.....	.....
1873	4	.71	SW	42.02	74	3	.....	.....	.....
1874	1	.30	NE	37.99	68	18	28.65	29.14	28.20
1875	2	1.21	SW	36.86	80	5	28.65	29.06	28.18
1876	6	3.96	NW	32.65	66	5	28.74	29.25	28.24
1877	3	2.70	SW	38 87	76	3	28.76	29.18	28.23
1878	5	1.77	NW	49.53	81	17	28.64	29.00	28.15
1879	0	.00	NW	46.63	85	10	28.67	29.14	28.22
1880	2	.50	NW	41.24	80	-2	28.57	28.99	27.97
1881	1	.75	NW	36.20	72	13	28.54	28.91	27.80
1882	2	.80	SW	46.73	78	12	28.67	29.15	28.04
1883	3	1.05	NE	39.19	73	13	28.71	29 23	28.10
1884	5	2.36	NE	40.25	75	8	28.60	29 00	27.72
1885	0	.00	SW	40.34	73	15	.....	.....	.....
1886	6	1.55	NE	38.72	82	9	28.87	29.39	28.37
1887	3	.42	SW	42.85	83	23	28 96	29 47	28.61
1888	5	2.48	S	35.77	83	6	29.05	29.55	28.47
1889	4	1.99	.....	43 01	77	15	29.05	29.42	28.48
1890	5	.13	E	37.18	77	2	28.95	29 47	27.93
1891	6	2.24	N	33.43	69	-4	28 88	29 33	28.40
1892	7	4.60	NE	39.16	77	10	28.89	29.34	28 14
1893	3	.99	S	39.65	87	6	28.83	29.43	28.17
1894	4	.67	N,S	46.04	86	8	28 85	29.48	28.32
Means	3.5	1.30	NW	40.44	77	10	28.78	29.24	28.19

WIND RECORD.

March.	*Total Miles.*	*Mean Daily.*	*Maximum Daily.*	*Minimum Daily.*	*Mean Hourly.*	*Maximum Hourly.*
1889	6871	221.64	537	55	9.24	37
1890	8180	263.87	630	89	10.99	46
1891	9751	314.57	662	126	13.11	37
1892	11135	359.19	690	105	14.97	44
1893	10231	330.03	627	32	13.75	39
1894	11147	359.58	683	132	14.98	45
Means	9553	308.15	630	90	12.84	41

E. R. NICHOLS, Observer.

Shoe Business For Sale.

I will sell for cash my stock of shoes and fixtures. Stock in good splendid shape. Trade good and well established. Best location in the city. This is a splendid business opportunity, and at the same time one can enjoy the College and school advantages of Manhattan. Address, Leslie H. Smith, Manhattan, Kansas.

Shop Notes.

The usual decreased attendance at College during the Spring Term has noticeably effected the industrial classes in this Department. However, the sixty-eight boys in the Carpenter Shop have all the more room and are doing good work. Several of them have designed and are building for themselves desks, book-cases, tables, etc. The designs are excellent and the work good. To make a good design for any construction is not so easy as may be at first imagined. The proper porportions of rails, stiles, panels, mortises, and tenons must be looked to for appearance as well as sound construction. Many a workman cannot design the simplest construction nor make a readable drawing from sketches furnished him, and yet can use his saw and chisel to the hundredth part of an inch. Our boys are learning to use the pencil as well as the chisel.

The class in iron-work numbers thirty and is divided between the blacksmith shop and machine shop. One would think that a bicycle repair shop had been established here if he spent much time in this shop, for nearly every "wheel" in the neighborhood has been stabled here for repairs within the last six weeks. The ball-bearings of these machines are interesting studies for any mechanical engineer, and may well be so, for the question of their application to other

machinery is only one of time and their perfection. A guide to the band-saw in the wood-shop has been made and put in lately, which has this kind of bearing. Hardened steel balls of any diameter from one-two hundredth of an inch up, and warranted to sphercity within one-five thousandth of an inch, can be bought' and we need not wait long to see their extensive use in machine building.

The dynamo for the power plant is in position, and is only waiting the rest of the equipment to do its part in the system of things promised in the future. The floor-stands, bearings, and castings of the fifty-horse-power clutches are being turned out by our foundry and machine shop, and will soon be ready for erection in the dynamo room. The clutches must be capable of transmitting fifty horse power, and must connect three pieces of shafting placed end to end. The space being limited, a special design of clutch had to be used. The shafting was obliged to be delicately adjustable and yet more than ordinarily rigid, and required a new design of floor-stand and bearings.

The lathe loaned to the Department some time since by Mr. Harrold is in position and doing good work. It is the largest in the shop, and is a valuable addition to the equipment. C. R. HUTCHINGS.

A Chance for Young Men on the Farm.

I believe that a great deal too much has been written and said about the depression in agriculture, and the hard times farmers are having. By this many young men are deterred from becoming farmers and go to swell the numbers in the cities who struggle for place, and of whom so large a proportion fail to accumulate property. To-day let one hundred farmer's sons settle on the farm and go to work intelligently, and the chances are that a good deal more than half of them will in twenty years own their homes, and be possessed of a comfortable competency; for it does not take a large sum of money to make a farmer independent. Of the same number of boys who go to the city, the chances are that not more than one in ten will succeed, and own a home and be able to enjoy a little leisure.

The boy on the farm will have some days of harder work than the one in town, but he can have more leisure to improve himself. The boy who takes a clerkship will do well if he gets a vacation of two weeks in a year, and some of them do not get that, and in many cases must put in the evenings as well as the day time. When he stops work his income stops, and if he marries and raises a family the chances are ten to one that life becomes a struggle to keep the wolf from the door.

The chances for success to the intelligent young man who settles down on a farm are better now than they were when I started in life before the war. Many will perhaps dispute this, but I fully believe it, for several reasons. A farm can be bought now for less money than at that time. There have been so many farmers growing low-priced wheat and following along in the old ruts, listening to the croakings of politicians, that in many places farm lands are depressed far below their real value. In my own locality farms on a good free turnpike, with fair improvements, and within three or four miles of a good market town, with three colleges, have sold during the last few years at from $20 to $40 per acre, and an occasional farm has sold even lower than this.

Interest on the deferred payments on a farm is much less. When I bought my farm, in 1858, 10 per cent interest was the rule, and I paid that for many years, until I had paid nearly as much interest as the principal amounted to; but now no one expects more than 6 per cent interest on deferred payments on land. The farmer today has much better implements to work with, and can buy them at a moderate price; and it is scarcely exaggerating to say that with the tools we now have, one man can do as much as two could then, and do it more easily and better. In proof of this, I state that then grass was mostly cut with the scythe, and that now, with a mowing machine costing $40 and which will last from ten to twenty years. I can go to the field after a five o'clock tea and in the cool of the evening cut more grass than I could mow in a day. Then corn was planted by hand, and it took about six hands a day to plant ten acres. Now two men will plant fifteen acres or more in a day. Then we had to go twice across a field to plough a row of corn; now we plough both sides of the row at once. Then all hand garden work was done with hoes; now the hand cultivator enables one man to do the work of six.

The young farmer now has an opportunity to learn more about his business in one year than we could in the old days in ten. Agricultural books and papers were in those days not only scarce and high priced, but also vastly inferior to those now published. We had no farmer's institute or experiment stations, and such a thing as a farmer's club was scarcely known. Then each man had to study out for himself many things which he can now learn from others.

Why then do we hear so much complaint and see so many farmers living in poverty, with untidy, dilapidated homes, and showing that they have little ambition or desire to improve? Some of these reasons I will try to point out. One of the first is that so many farmers are heavily in debt, and this in many cases is because they attempt to own and cultivate too many acres. The young farmer who could begin with twenty-five, or even fifty, acres of land and soon be out of debt, is ambitious to own 80 to 160 acres, and starts hopelessly in debt, and is so hampered that he is unable to buy good implements or to make necessary improvements. This is not the only trouble that comes from owning (?) too much land, for it is a constant temptation to put out a larger breadth of crops than it is possible to cultivate thoroughly. In proof of this I need only to call attention to the average yield of the leading crops even in our best agricultural States. What possible profit can there be in wheat with an average yield of twelve to fourteen bushels per acre, corn at twenty-five to thirty-two bushels, and hay at one ton? And remember that if these are averages there must be a large per cent of farmers who grow much smaller yields.

But after all, the principal reason I believe to be the want of adaptation of crops to the farm and the market. There are scores of specialties in farming which, under intellectual management, may be made certainly profitable, and the competition in the line of these specialties usually narrows down to a few near neighbors, while those who make wheat and corn their staples come in competition with thousands of farmers, most of whom may have a better soil and climate for producing these crops. For example, in my township every farmer grows wheat for market, but I know of only one man who is making a business of producing gild-edged butter, and his sales per cow each year will buy two good three-year-old steers. I have had an excellent opportunity to study the causes of success and failure on the farm in my institute work for several years past, and I have found that the young men who have used their brains, have thought out a plan beforehand and followed it, are not only successful, but enthusiastic in their calling.

I think I occupy an unusually favorable standpoint from which to judge of the chances for success in life on the farm, for while I have spent fifty years in farm-work I have seen much of other callings, and I am confident and earnest in the statement that to the man who loves the country and who prizes security and a moderate competency above great wealth, the life of a farmer offers great opportunities and inducements.—*T. B. Terry.*

Grounds and Buildings.

The College grounds and buildings, occupying an elevation at the western limits of the city of Manhattan, and facing towards the city, are beautiful in location. The grounds include an irregular plat in the midst of a fine farm, with orchard, vineyard, and sample gardens attached, the whole being surrounded by a durable stone walls. The grounds are tastefully laid out and extensively planted, according to the design of a professional landscape gardener, while well-graveled drives and good walks lead to the various buildings. All of these are of the famed Manhattan limestone, of simple but neat styles of architecture, and admirably suited to their use. All recitation rooms are excellently lighted and ventilated, and are all heated by steam or hot water. A complete system of sewerage has been provided.

College, 152x250 feet in extreme dimensions, arranged in three distinct structures, with connecting corridors. This building contains, in its two stories and basement, offices, reception room, cloak rooms, studies, chapel, library, reading room, kitchen laboratory and dairy, sewing room, society rooms, printing office, and twelve class rooms.

Chemical Laboratory, one story, 26x90 and 46x75 feet of floor space, in form of a cross. It contains eight rooms, occupied by the Department of Chemistry and Mineralogy.

Mechanics' Hall, 39x103 feet, two stories, and 40x80 feet, one story, occupied by wood and iron shops music rooms, iron foundry, lumber rooms, etc., in addition.

Horticultural Hall, 32x80 feet, one story and cellar, having cabinet room, class room, and storage, with greenhouse attached.

Horticultural and Entomological Laboratory, with propagating houses attached.

Museum Building, 46x96 feet, and two stories high. This building, which has served many purposes, is now fitted for an armory, drill room, and veterinary laboratory below, and for class room and laboratory for Department of Botany and Museum of Natural History above.

Science Hall, containing the library, with ample reading rooms; class rooms and laboratories, and cabinet room for zoology, entomology, and botany; and suitable rooms for the various College societies.

Appropriation is also made for a central steam plant, to furnish heat and power for all the buildings. This plant is to cost $14,000, and will be completed in the fall of 1893.

The farm barn is a double but connected stone structure, 50x75 feet and 43x96 feet, with an addition of sheds and experimental pens 40x50 feet. A basement, having stables for 75 head of cattle, silos, engine room, and granaries, underlies the entire structure.

The horticultural barn is a stone building, containing storeroom, granary, and stables for several horses.

The foundries, lumber house, implement house, piggery, and various out-buildings are of wood.

Two stone dwellings, occupied by the President and the Professor of Agriculture.

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

Mr. T. B. Terry, one of the most successful of Ohio's farmers, and an authority on agricultural matters, told a recent visitor that no fertilizers are used on his farm. Mr. Terry, having tested thoroughly various kinds, comes to the conclusion that they are in the main without value. He therefore depends on turning under a good crop of green clover and on the manure from his stable. The horses are bedded with all the wheat straw that they can stand on, and the extra straw and other loose material about the farm find their way into the manure heap.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

A NEW BLACKBOARD COMPASS.

The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Kurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.

MANHATTAN ADVERTISEMENTS.

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FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

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A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

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DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

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DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

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SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

SHAVING PARLOR.

6 BATHS, $1.00 cash. 12 shaves, $1.00 cash, Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, South Second Street.

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THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

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THE INDUSTRIALIST.

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Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

IRRIGATION FOR EASTERN KANSAS.

BY PROF. S. C. MASON.

WHILE an irrigation movement of the first magnitude has captured western Kansas, comparatively little of this excitement is shown by the eastern portion of the State. To be sure Salina and Wichita have had the most enthusiastic of Irrigation Conventions, but the assembling at these points has been more on account of their accessibility and size, and the interest the towns themselves feel in the movement from their being gateways, in a sense, to the undeveloped country beyond them, than to any actual interest in irrigation on the part of the farmers in those sections.

With the exception of Mr. Munger's plant just constructed in Greenwood County, irrigation enterprises of any magnitude are confined to the western half of of the State.

People who are conscious of living in a region with from thirty to over forty inches of rainfall annually are apt to think that water-rights and ditches and the sub-flow are matters of no interest to them. They are even at times too busy in digging ditches to take care of surplus water to think for a moment of a ditch to lead water onto their land.

Is it then necessarily true that the subject of irrigation has no interest to the people of eastern Kansas beyond the charitable wish that their western brothers may be able to secure some relief from their unfortunate condition? Has the East never suffered from drought, or seen promising crops perish for lack of a little water at the proper time? No one will deny that it has. Whether this lack is great enough to justify an expensive outlay for dams, ditches, etc., that water may be applied to general farm crops, is a question that the future must answer. I believe that the same question is equally pertinent to western Kansas.

The value of the crop that may possibly be produced, and the cost of procuring and applying the necessary water to that crop, are questions that must be carefully weighed by the irrigator in any land. No mere impact of enthusiasm can make irrigation profitable when the water costs more than the value of the crop that may be produced.

Except where the water supply is very abundant it may be doubted whether the irrigation of such common field crops as wheat and corn can be made profitable in either eastern or western Kansas. It is only with the highest degree of intensive culture that the use of high-priced water can be made profitable.

Such vegetable crops as are commonly included under the head of "truck" not infrequently give returns of from $100 to $200 or even more per acre. Orchard and small fruits sometimes give still better returns. Three hundred bushels of strawberries have been grown on a single acre of land times enough to leave no doubt about the fact. At five cents a quart, $480 would be the value of this crop. With such crops as these in danger from drought, water at even a high price could be very profitably applied.

The quantity of water required to cover an acre one inch deep is 27,155 gallons. Making this an even 30,000 gallons, to allow for waste, the cost of an acre-inch of water at twelve and a half cents per 1,000 gallons, the price at which the City of Manhattan furnishes water to large customers, would be $3.75. What market gardener or small fruit grower has not seen the time when an inch or two of water on his crops would have been worth many times this price?

There are a few gardeners of my acquaintance to whom the well, with windmill and tank, is as essential a part of the outfit as team and tools. Water is used in abundance in setting plants, if the ground is dry, and a perfect stand thus secured, which is one of the most important factors to success. If the crop flags during a drought, water is turned on to help out till rain comes.

When raspberries and strawberries have set an abundant crop and are nearly ready to harvest, a drought does not alarm them, for the water is ready and brings the fruit to perfection, while their less provident neighbors, after picking a few acres, must see the rest of their crop wither on the vines.

Over much of eastern Kansas the best small fruit and truck land is found on the river and creek bottoms where inexhaustible water may be reached at from twenty to thirty feet. With the pumps and windmills of large capacity now manufactured for this special work, such a well will become indispensable to the gardener who has once learned the worth of it.

There are, within a few miles of Manhattan, a score of large springs which run away unused, even damaging land upon which they discharge, which, if the water were properly piped and distributed, would make the land below them the most valuable portion of the farm. There are small streams on many farms that might be dammed at a trifling cost, and the culture of a few acres adjacent to these ponds made more profitable than large fields devoted to staple crops. The wisdom of following the one course or the other must depend largely upon the man, and a good deal upon the location and market; but the time is surely not far distant when such opportunities for intensive farming will be held at their true value.

If more men were trained to the most skillful means of making an acre of ground yield its utmost, the cry of the unemployed would not be so often heard in our land.

NOTES.

BY PROF. A. S. HITCHCOCK.

POTATO SCAB.

INQUIRIES have been received by the Botanical Department concerning methods for the prevention of this disease.

The treatment recommended by Professor Bolley of the North Dakota Experiment Station, and which has been proved to be entirely satisfactory, is as follows: "Dissolve corrosive sublimate (bichloride of mercury) in water at the rate of two and one-fourth ounces of the chemical to fifteen gallons of water. Immerse all potatoes to be used for seed purposes in this solution one and one-half hours, after which they may be cut and planted as usual." The chemical should be obtained from the druggist in a finely powdered condition, and ought not to cost more than twenty cents per ounce. It must be remembered that corrosive sublimate is a poison, and care should be used in handling the powder; but in the prepared solution, one part in one thousand, no injurious effect will be produced upon the skin. The solution would however be injurious if taken into the stomach, and hence the treated potatoes should all be planted. A wooden vessel should be used to contain the solution, since metal is quickly corroded by its action. The powder should be entirely dissolved before using. This may be hastened by pouring on at first about two gallons of hot water. It may be found convenient to enclose the potatoes in a sack for the dipping. If the tubers are dirty, they should be cleaned before treatment. It is needless to say that the potatoes used should be free from the scab, as the treatment is intended to destroy the germs that adhere to the surface. It is also unsafe to use ground that has produced a scabby crop.

LEAVES OF TREES AS FODDER.

The Consular report for February, 1894, gives an account of this use for leaves in Europe. The scarcity of hay, especially in France, has compelled the farmers to resort to the leaves and young branches of hazel, aspen, ash, elm, and willow. The leaves are first dried and are then fed with other fodder. It is found that the best results are obtained by harvesting the leaves in July and August. The Consul who writes the report ends by asking, "Why do not the European farmers take our maize? All this trouble in Europe is taken to find substitutes and to save cattle, and yet 2,000,000,000 bushels of the best food for man and beast burden the farmers and barns of the United States." He adds that the Europeans do not know enough about our land and recommends that "The efforts now being made by the Department of Agriculture should be supplemented by a combined effort of the States likely to profit by the introduction of maize into Europe."

DISCOURAGEMENT A SOURCE OF FAILURE.

BY B. F. S. ROYER, '95.

THERE is perhaps no better time for treating a subject than the time in which it makes itself a subject for treatment. So a subject of this nature has reached its maturity, especially in college life, close to an examination, or when failure stares us in the face.

This is, however, not restricted to college life alone, for it effects every department of life. How often do we see men, when discouragement overtakes them, look only on the dark side of everything, and never see good in anything.

For this cause, many students who, with bright hopes and noble aims, contemplating a full collegiate course, become indifferent, and, acting on the impulse of the moment, in time of discouragement, leave col-

lege. Many, too proud to return, forever blight their brightest hopes of preparing for the duties of manhood and womanhood, and the result is a failure in college life.

But here is a merchant, a well-to-do man. He carries a large stock of goods; but the weather has changed; hard times are coming on, and there is no sale; still his payments are to be met from some source. He worries at night; becomes peevish and fretful, indifferent to his minor duties; and a failure is almost the inevitable result.

Again, how certain is this tendency in rural pursuits on which all vocations depend. Take, for instance, our own dear Kansas. It has been the fortune of our State to be first and foremost in everything undertaken, and, indeed, she has had her share in drouths or insect invasions, and in all has come out more than conqueror. Her broad praries and fertile valleys seemed destined to a noble use. Agriculture, the noblest of vocations, found its way here and thrived. But after encountering many depressing effects of drouths, storms, insects, debts, and political turmoils, discouragement has followed, and undoubtedly has been the cause of many failures. But these are temporary. Bright prospects are still here for those who hold their peace and wait. Discouragement began with Adam's exit from the garden of Eden, and will ever recur in the history of the race. It may well be given as a name of a disease whose symptoms are listlessness, indifference, and melancholy, caused by disappointment or ill-luck and cured by a cheerful heart, helping hands, and a determined perseverance.

KANSAS WOODLANDS.

BY PROF. D. E. LANTZ.

THE limited forest area of Kansas at the time of its settlement should have impressed the settlers with the importance, not only of preserving every acre of timber then existing, but also of adding to this acreage as far as circumstances permitted. Doubtless prairie fires and the browsing of buffaloes had much to do with limiting the forest growth to the margins of streams. The prevention of the former and the destruction of the latter would therefore cause a natural extension of the growth of timber. If to this natural tendency the settler had added a careful planning to keep stock out of the growing timber and to protect it from fires, the acreage of timber would have steadily grown through all these years.

How has the Kansas settler used his opportunity? In Eastern Kansas the number of acres in woodland has decreased to an extent which, if stated, would hardly be creditable to the settlers themselves. There are no reliable statistics on the subject, but careful observation would probably show a decrease in many counties of fifty per cent of our woodlands in the past thirty years.

Often this destruction has been wasteful in the extreme. The common Missouri method of girdling the large standing trees to kill them, and thus prevent the shading of the crops, has often been resorted to. Afterward the dead trunk has been cut down and removed by burning. The common excuse for clearing land is that it is needed for farming. Sometimes the wood product has been of sufficient value to enable the farmer to justify the cutting, but hardly to justify the abandonment of the land to farming. A new growth of timber, properly cared for, would in time be more valuable than the other crops grown upon the land. In the hilly country near Manhattan there are many deep ravines which were once wooded on their slopes with a considerable growth of oak, hickory, pawpaw, elm, ironwood, bass, and cedar trees. A large proportion of these slopes have been denuded of their timber. The results have been marked with an extent of loss which no one can fully estimate.

Formerly there were springs in nearly all these ravines, and an abundance of water flowing through them at all seasons of the year. The value of this water supply in the pastures can hardly be overestimated. For the past ten years this supply of water has steadily diminished, especially in the dry seasons. That there is an intimate connection between this water supply and the timber growth, is easily proved by observation. One ravine west of town had all its timber cut off in a single winter. The next season the heavy rains filled the bottom of the ravine with gravel and sand to the depth of several feet. Since then there has been no water for stock in the ravine at any season of the year; while before the cutting there was a never-failing supply.

The small stream which used to flow into the Kansas River east of town, near the wagon bridge, was hardly ever without a good supply of water ten years ago. Now it contains water only after long-continued and soaking rains, and is dry for the greater part of the year. The failure in its water followed immediately after the destruction of the timber on the stream above.

Wild Cat Creek, west of town, has not now half the volume of water in the dry part of the year that it had formerly at similar seasons. Who can say that the cutting out of timber along its course is not the cause for the decrease in the volume of the stream?

A TOPIC OF THE TIMES.

BY W. E. SMITH, '93.

DOES education tend to create in an individual a desire to abstain from labor? Or does much learning create laziness?

While education in a special line, or in a classical one, may tend to lead one away from manual labor, I believe that education, in a general sense, where the thought of physical labor is not entirely banished, but where it is required, as in industrial schools, does not. On the contrary, it is an indispensable help, enabling one to guide or direct the physical powers in the shortest route to attain a desired result without loss of time and energy.

Manual labor implies that labor which is performed by the hands. There are three divisions of labor: first, and highest, mind labor; second, the co-operation of mind and the muscles; third, physical labor.

Under the first, we find, commonly, the different classes of speculators, etc. The second presents to us individuals who manage their own business or oversee the work of others, such as the higher grades of mechanics, merchants, and tillers of the soil. In the third, falls the man who does nothing but follow the plans and designs of the overseer, whose daily occupation, for example, is to dig a line of post holes that have been carefully laid out and marked by his overseer, and whose sole thought is concentrated upon the financial consideration of perhaps seventy-five cents per day, or eighteen dollars per month, with food and washing and a place to sleep.

This is the lot of the average manual laborer. He has nothing to occupy his mind. With perhaps enough education to read and write his name, and not enough to interest him in reading from a weekly newspaper, what kind of a man could realize any pleasure from such an existence? Just seriously and solemnly contemplate the digging of a post hole that has been carefully marked with a peg, and consider that you have to follow the business for the major part of "three score years and ten;" then calculate the pleasure one could derive from it. Let an educated man take the same piece of work, nothing whatever to think of except an excavation a foot square and eighteen inches deep; take away the pleasure of engineering the work, eliminate everything except the financial remumeration, and one does not have to stretch the imagination very far to realize that there would be other sounds than the "tinkling of bells" and the "lowing of kine" and other perfumes than that of wild flowers pervading the atmosphere.

I do not mean to imply that an educated man will not submit to hard work, but there must be a certain amount of cheerfulness connected with labor to enable one to work with zeal and earnestness; and this pleasure is not easily realized when one labors for another. In fact, I believe no individual can work for another in the right spirit; that is, like he would and could toil for his own interests.

This is especially noticeable in educated persons. There is a desire to work for one's self—a craving for independence. Naturally, educated people do not fall in this third class, but pass into the middle one. They are overseers and designers. They find employment in planning work for those who are not capable of doing it and managing its execution. It is not a spleening against manual or physical labor, but rather the force of circumstances that places him where he is. He is not required to do the toiling, as there are plenty of others to step in and do it, and really the more he educates himself the more is his manual labor decreased.

Broad Wagon Tires.

It seems to the writer that no one who has noticed the effect of wide and narrow tires respectively upon our highways can come to any other conclusion than that the narrow tires cut up and needlessly injure them when either wet or dry, and that the wide act like a roller, smoothing down and compacting them, making better instead of worse, except at the very rare times when no wagon should be upon the road. Farmers generally greatly prefer the wide tire for early spring work on the farm, and for work on soft ground at any time of year, as both easier for the team and better for the land. Is there any reason why the same rule does not apply to the road, except that the common use of narrow tires compels the wide tire man to do extra and needless work of repeatedly breaking a new track?

I believe the abolition of the narrow tire for everything except light spring wagons would give us much better roads at greatly reduced expense; and that after fair trial no consideration would induce us to go back to the old way.

On the second question, "How may we best encourage their use?" I would suggest:—

1. The education of public sentiment through institute, Grange, and newspaper, discussion such as you have now invited.

2. By experimental trials of the two styles of wagons, on suitably prepared ground, with draft tests, at our State and county fairs, under the provision of competent judges, with publications of results.

3. If such experiments should plainly prove that the narrow tires caused needless injury to the highways, destroying what the public has been taxed to provide for the benefit of all, might it not be proper for the Legislature either to prohibit their use, or to impose on them such a tax as would gradually but certainly bring about their disuse?—*C. C. McDermid, in Grange Visitor.*

Here is an example afforded by careful experiment at the Ohio State University. An ordinary wagon, with a new three-inch tire, was loaded with two long tons, or 4480 pounds, and the draught was measured by a dynamometer. On an ordinary earth road, in good condition and hard, the draught was 254 pounds. On a grass field it was 468 pounds. On newly plowed land it was 771 pounds. As the draught power of an ordinary horse of 1,000 pounds is 150 pounds, two horses could draw this load with ease on an ordinary road, and a ton and a half on a grass sod; while with the narrow tire half as much, or a single ton, is a full load for a double team. The principal advantage, however, of a wide tire is that the common earth roads are soon rolled flat and smooth and are not cut into ruts and mud, and thus the wagons do not go always in the same track. This itself is a great advantage to a team and a great saving of the roads.—*Colman's Rural World.*

FARM NOTES FROM VARIOUS SOURCES.

Nothing will spoil the flavor of butter quicker than mouldy stalks or hay. If you have any such on hand, feed them to any other stock than the milch cows.

Much farming is done on tradition. Our fathers or grandfathers were successful farmers, and we are apt to feel that their practice must be a good rule of action.

On a large part of our farms the garden is not what it ought to be. More vegetables ought to be grown that more luxuries may appear on the farmer's table.

When ordering your garden seeds be sure and not forget to let the wife and children order a few flower seeds. Even if it is hard times we cannot afford to let all beauty depart from our homes.

With a large flock of chicks, abundance of milk, a good sized patch of strawberries and a vegetable garden, the health of the family may virtually be assured and the provision dealer's bill greatly reduced.

The reason why red clover is so valuable a fertilizer is that it furnishes, in great quantity, nitrogen, the dearest of the three principal elements of plant food. The more clover that you can grow and feed or turn under the better your farm will become.

A Kansas fruit-grower says that corn is undoubtedly by far the best crop for an orchard that can be grown, as it breaks the wind, and the trees grow up straight. Insects, as a rule, will not trouble the trees when there is plenty of green fodder and corn for them to work on.

Mixed farming is essentially of the composite order of things. Within certain bounds it is safe to say that the farther away the western farmer can get from the one-idea order of conducting farming operations the better for himself and all concerned. Corn and wheat are no longer the alpha and omega of the farmer's office on earth. In the future it is to be more than ever high grades of beef, mutton, and pork, high grades of dairy products, fruits of superior quality, and, may we also add, sugar of the purest brand, that shall mark the profit there is in the western farmer's calling. These are sure to come about with the following of good practices along proper lines of policy.—*Colman's Rural World.*

The first requisite of successful horse training is to recognize that he is not a sullen brute. Is not all animate existence dependent on the same will? Are we not all children of the same Father? In this sense a brother, with a mind, soul, and a conscience,—weak, undeveloped, dormant perhaps, because his environments have not stimulated them to growth and action—awaiting the touch of scientific knowledge and training to awake and unfold and progress. So let us have compassion for him that he is a slave; charity, if at times he resents injustice and brutality, and, swept by a thrill of the same feeling that in man is dedicating the world to freedom, he rises in open rebellion against his tyrant master. Let us have infinite patience and some tact in bringing our ideas and wishes within his mental grasp. Let us remember that kindness and love are the most irresistible weapons in the world. And, above all, let us give him praise and admiration that under unfavorable treatment and hard conditions often he has proven a faithful servant, and the most affectionate, beautiful, and intelligent friend of man.—*A. U. Haydon, in Grange Visitor.*

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Mrs. Holsinger visited her son in College yesterday.

Mrs. Mary Smith visited chapel Wednesday morning.

The warm rain of last night already makes its influence felt on vegetation.

Prof. Walters lectured at Osborne last evening, fulfilling a long-standing engagement.

N. Christensen, of Mariadahl, visited chapel Tuesday morning with his son George, Fourth-year.

Mrs. Pulver, of Chapman, has been visiting her son in First-year classes. She looked over College Monday.

May Willard, Third-year, has been enjoying a visit from her mother, who came up from Wabaunsee, Saturday.

Mrs. Cress, accompanied by Mr. Montgomery, cornetist in Ft. Leavenworth Military Band, visited chapel and College grounds Friday.

The ball game at the City Park, yesterday afternoon, between College and town clubs, was won by the latter, the score being 16 to 17.

County Superintendent Swingle visited College Monday improving the opportunity to use the library for some investigations in his work.

Prof. Olin attended the meeting of the Kansas Academy of Language and Literature at Topeka this week. Mrs. Olin accompanied him.

H. J. Ahlbrecht, vice-president of the Central School Supply Co., Chicago, has been in the College halls this week obtaining agents to represent them during the summer vacation.

The Fourth-year Class has elected the following officers for the Spring Term: President, Lorena Helder; Vice-President, V. I. Sandt; Secretary, Stella Kimball; Treasurer, J. C. Christensen; Marshal, C. C. Smith.

Mr. Horace Palmer, of Detroit. Mich., spent several hours at the College Wednesday morning in company of Mr. Wm. F. Allen, of Manhattan. Mr. Palmer travels in the interest of the manufacturers of a new wire fence.

The Horticultural Department offers about 500 Scotch and Austrian pines, two to four feet in height, at greatly reduced prices for ten days. Owners of homes will take notice, as bargains in choice nursery-grown pines are not often offered.

The hardy plants in the gardens have been uncovered for almost a week. Everything seems to have wintered well, and promises a rapid growth. A large group of Iris Kæmpferi are especially thrifty, and should make a grand show in season.

Rev. Mr. Davis of Iowa led in chapel exercises Friday morning. He, in company of Judge Pipher of Manhattan, spent a portion of the day in looking over the grounds. Mr. Davis was a student at the College in early days, prior to its removal from the old place.

The Webster Society on last Saturday evening elected the following officers for the Spring Term: President, Jno. Stingley; Vice-President, H. G. Pope; Recording Secretary, E. H. Webster; Corresponding Secretary, E. R. Farwell; Critic, G. C. Wheeler; Treasurer, J. W. Finley; Marshal, T. M. Robertson. The Board of Directors is to be elected the next session.

The following officers will serve the Hamilton Society for the current term: John A. Scheel, President; R. J. Barnett, Vice-President; J. J. Johnson, Recording Secretary; F. A. Dawley, Corresponding Secretary; H. G. Johnson, Treasurer; W. O. Staver, Critic; O. Strahl, Marshal; Board of Directors, E. L. Frowe, R. S. Kellogg, C. A. Johnson, J. W. Holland, and C. E. Pincomb.

The Regents were in session last week and we are glad to learn that they appreciated the very excellent work done in our College, and purpose to still keep it to the front of agricultural colleges in the work. They realize the danger of change, and know that the longer a person is in a responsible position the better he is prepared to fill that position. The citizens of Manhattan and Kansas are proud of their Agricultural College, which now stands at the head of such institutions.—*Mercury.*

The fourth division of the Fourth-year Class entertained in chapel Friday afternoon. The speakers were J. F. Odle, "Arbitration;" Belle Frisbie, "Night Brings Out the Stars;" C. R. Pearson, "The Income Tax;" Minnie Romick, "The Increasing Yield of Liquor;" J. A. Scheel, "Characters that We have Sometimes Seen;" Winnie Romick, "The West of Yesterday, the East of Today;" C. C. Smith, "A Dream and its Interpretation;" J. V. Secrest, "Some Tendencies of Our Times." The audience was favored by a piano solo by Miss Bowen, entitled "By the Brook."

The Fourth-years especially are glad to welcome back to classes S. R. Vincent, who was called away a few days ago to attend to the affairs of his claim. The dropping out of Fourth-years saddens all, and Vincent's return causes general rejoicing.

GRADUATES AND FORMER STUDENTS.

A. D. Rice, '93, was among the visitors at chapel Friday afternoon.

Fairy Strong, Second-year in 1891-2, and Miss Leonhart visited classes, Friday.

Marie Haulenbeck, Third-year in 1892-3, is clerking for John Coons, the shoe dealer.

Jack Smallwood, Second-year in 1891-2, was around College halls Thursday morning.

Edith McDowell, '93, finds time for an occasional visit to familiar scenes at College.

Mrs. Blanche Hayes-Williams writes of a pleasant home, and that she is greatly enjoying farm life.

E. C. Thayer, Misses Lillian St. John and Nellie McDonald, all of the class of '91, visited college Friday.

Word comes that Edith Stafford, First-year in 1891-2, is pursuing a successful course at the State Normal, where she expects to graduate.

Marie Blachly, First-year in 1891-2, visited College Monday, on her way from Emporia, where she has been attending the State Normal.

At the recent meeting of the State League, Robt. J. Brock, '91, was chosen as delegate from Riley County to the National Republican League meeting in Denver, June 22nd.

D. G. Fairchild, '88, now pursuing special studies at the Botanical Gardens, Palermo, Italy, celebrated his birthday on the 7th by a cablegram of good cheer to his parents.

F. W. Dunn, '84, who has spent the past few years in Colorado, has been appointed Assistant in the irrigation experiments soon to be undertaken by the College Experiment Station at Garden City, and is now here for consultation with the Council.

Harry E. Moore, '91, writes as follows: "I am at work within one block of the Union Depot at Kansas City, Mo., and within a few days shall reside with my parents at No. 3305, Troost Avenue. Any friends passing this way are invited to step over at least long enough to say 'How do you do?'"

Board Meeting.

The Board was in session from Wednesday afternoon to Friday evening, last week, Messrs. C. B. Hoffman and C. E. Goodyear taking the places upon the Board vacated by Regents Forsyth and Wheeler. Vice-President Street presided until the election of officers was completed, resulting in the election of W. D. Street, President; Harrison Kelley, Vice-President; Ed. Secrest, Treasurer; G. T. Fairchild, Secretary; and E. D. Stratford, Loan Commissioner. The following standing committees were appointed by the chairman: Finance—Regents Hoffman, Goodyear, and Kelley; Farm management—Regents Kelley, Secrest, and Goodyear; Horticulture—Regents Goodyear, Stratford, and Street; Grounds and Buildings—Regents Secrest, Hoffman, and Fairchild; Employes—Regents Stratford, Fairchild, and Hoffman.

The Secretary reported the detail of Captain Cavenaugh to succeed Captain Bolton, and also correspondence with members of Congress as to certain legislation affecting the Military Department and the Experiment Station.

At a joint meeting, Wednesday evening, all the members of the Faculty, except Prof. Lantz, who was called out of town, presented in person the condition of the several Departments.

Action was taken in regard to immediate advertising, and each member of the Board and Faculty was requested to present in writing or otherwise, ideas as to the best means of increasing the number of students. An edition of seven thousand catalogues was authorized.

Treasurer-elect Secrest presented a bond for $50,000, which was approved, and a committee, consisting of the Chairman of the Finance Committee, the Secretary and the Treasurer-elect, was appointed to settle with the outgoing Treasurer. The compensation of the Treasurer was fixed at the rate previously paid.

Reports of Regents Kelley and Street upon the selection of sites for irrigation experiments in Finney and Decatur Counties were received, and the Station Council was authorized to purchase a pump and other apparatus for the work at Garden City, and to proceed with the construction of a well and a reservoir in Decatur County as soon as the land is leased. One thousand dollars was allowed for expenses of oversight and labor at Garden City.

The estimate of the Council for Station expenditures during the current quarter were approved.

Upon recommendation of the Council, J. B. S. Norton was given the place of Assistant in Botany for the Station, with the privilege of completing his course of study in the next two years, provided his compensation shall correspond to the time devoted to Station work at the rate of $40 a month for full pay.

A committee, consisting of Regents Hoffman, Kelley, and Fairchild, was appointed to secure a suitable address for Commencement week.

Provision was made for construction of a bull-yard at an expense not to exceed $50; for exchange of the Hereford bull; and for purchase of the Shorthorn bull Golden Knight, at $350.

The following resolutions were presented and adopted, and Pres. Fairchild was authorized to secure portraits, if possible, of Messrs. Goodnow and Hougham for the new Library:—

In view of the recent death of Hon. I. T. Goodnow, one of the original founders of the College, chiefly instrumental in securing its endowment at this place, and officially connected with its administration as State Superintendent and ex-officio Regent from 1863 to 1867, and as Land Agent until 1873,

Resolved, That we hereby express our hearty appreciation of the service rendered to the College, the State, and the general cause of education by Mr. Goodnow's offorts, and our serious regrets that we shall miss hereafter his generous sympathy in our work, and appreciation of our progress.

Resolved, That we express to Mrs. Goodnow and other relatives our sympathy in their mourning for one whose deeds will remain forever a monument of praise.

In view of the recent death of Prof. J. S. Hougham, who filled the chair of Agricultural Science in this College from 1867 to 1872, and whose neighborly interest of late years has made him familiar to us all,

Resolved, That we hereby express our appreciation of Prof. Hougham's earnestness, enthusiasm, and good will as an educator and friend of agricultural progress, whose pioneer efforts were essential to our present advancement.

Resolved, That we express to Mrs. Hougham and his children our sympathy in their grief at missing the presence of one so cherished.

The revised course of study presented by the Faculty was approved, with the added requirement of military drill for all male students below the third year in the course.

The following resolution was adopted:—

Whereas, It is important that the agricultural classes, from the ranks of which the majority of the students of this College come, understand the economic laws which underlie all civilization; and,

Whereas, The Board of Regents is of the opinion that less time and attention than the importance of the subject demands have been given to it, either in the regular course of study or in lectures on this and germain subjects; therefore, be it

Resolved, That thirteen lectures of one hour each be given during the Fall and Winter terms of each year on political economy, by some member of the Faculty or by some other competent person designated or employed by the Board of Regents. These lectures are to take the place of the Friday afternoon lectures heretofore given by the Faculty on various topics. They shall be distributed as may best suit the interests of the Faculty and students, but shall all be given in the Fall and Winter terms. These lectures shall treat of the subject (political economy) consecutively, commencing with the primary concepts of the science, treating fully and dispassionately the various aspects of the economic and social problems. These lectures shall be non-partisan, but they shall not ignore nor unfairly treat the position taken by what is commonly known as the new school of political economists. The principles maintained by the advocates of land nationalization, public control of public utilities, and the reform of the financial or monetary systems, shall be fairly stated and candidly examined with a view of leading the student to grasp the principles involved in the science of production and distribution without bias or prejudice.

The Board adjourned to meet on Monday, June 11th, at 4.30 P. M.

Shoe Business For Sale.

I will sell for cash my stock of shoes and fixtures. Stock in good shape. Trade good and well established. Best location in the city. This is a splendid business opportunity, and at the same time one can enjoy the College and school advantages of Manhattan. Address, Leslie H. Smith, Manhattan, Kansas.

Notes from the Farm.

For the past two weeks* oats, wheat, and newly seeded grasses have been watched with considerable anxiety. Some time must elapse yet before we can tell just how much these crops will recover from the late cold weather, which gave us very unusual conditions. The warm weather in the first half of March stimulated every thing to a very rank growth, which was caught by several hard freezes. The ground was in a favorable condition, or things might have suffered worse than they did. From one-half to one inch of the soil on top was perfectly dry, and did not freeze to amount to anything until the last two cold nights. The soil underneath was fairly moist, and froze from two to four inches deep.

Wheat had made a growth of about four inches. In most all cases this was frozen to the ground. It was quite noticeable that in the swales, where there was a little more moisture and the rankest growth was to be found, wheat suffered worst and is making slow recovery. A few small patches like this will be almost entirely killed out. But most of the crop is recovering fast, and will make a full stand if a rain comes soon, for the present dry weather is retarding and injuring it much. The methods of seeding, time of seeding, etc., all show interesting facts as to the way the different treatments are recovering. Of the fifty varieties under test, a few, as the Davis, Lehigh, Hindoostan, are almost entirely killed out; and a few, as the Turkey, Zimmerman, and Tasmanian Red, had the tops only slightly frozen and show hardly any effects of the freeze now. The rest range between these two extremes, but the majority will come out all right. As a rule, the hard wheat suffered the least.

Oats had been up for several days before the freeze, and had made a rapid growth. The early seeding had just begun to start roots. The oats stood the first freeze of 25 degrees without killing the leaves, and were not killed until the temperature reached twenty degrees. If this had been all, oats would have suffered but little, as the ground did not freeze to amount to anything until the last two cold nights, when the temperature was only ten degrees above zero. Then the ground froze from two to four inches below the dry earth on top. But most of the plats show a

*Written under date of April 7th.

stand of from fifty to ninety per cent of a stand. Where certain varieties were used all was killed out, and where the seed was cultivated in corn ground or harrowed in on plowed ground, all was killed out. Seed that was sprouting but was not up was injured but little.

Some of the experiments will be reseeded, but plats showing a stand of seventy-five per cent will be left.

The growth of orchard grass and clover was frozen down, but has already made a new start. This year's seeding suffered considerably. Some of the clover was up and the rest had sprouted; this was all killed. The grass had germinated, but was not injured any, and is now above the ground. The alfalfa had been in but a few days, and had not sprouted, but at this date is up.

The experiment of feeding soaked and dry corn to steers was closed Friday night and the ten steers shipped to Kansas City. The soaked corn had made a gain of 164 pounds over the dry corn, but the hogs following the steers fed dry corn had gained 113 pounds the most. The details of the experiment will make a very interesting bulletin. F. C. BURTIS.

COLLEGE ORGANIZATIONS.

April 7th.

At the usual hour the first session of the Spring Term of the Hamilton Society was called to order by Pres. C. R. Hutchings. Although a rainy evening, roll-call showed that the majority of the Hamiltons were still willing to brave the stormy night for the sake of the Society. Following devotion, led by G. G. Boardman, was term election. John A. Scheel was unanimously elected President; R. J. Barnett, Vice-President; J. J. Johnson, Recording Secretary; F. A. Dawley, Corresponding Secretary; H. G. Johnson, Treasurer; W. O. Staver, Critic; O. Strahl, Marshal; Board of Directors, E. L. Frowe, R. S. Kellogg, C. A. Johnson, J. W. Holland, and C. E. Pincomb. Although the election was unusually quiet, all were pleased. As usual on election evenings the program was carried forward one week with the exception of G. H. Dial, Music committee, who had provided a flute duet by G. B. Norris and H. G. Johnson, with E. L. Frowe at the piano. The session was generously spiced with parliamentary ragging. Report of Critic. Adjournment. R. K. F.

April 7th.

The Webster Society was called to order by Vice-President Patten at the usual time. Owing to the opening of the Spring Term, and a rain storm, many absent marks were recorded at roll-call. The Society was led in devotion by E. R. Farwell. S. B. Newell and S. M. Strawn were elected and initiated as Websters. The order of "Debate" was passed for the evening, and J. B. Dorman began the program by a declamation, "The Raising of the Flag at Fort Sumpter," which indicated study in preparation and was well worthy of imitation: "The Apiary," was the subject of an essay read by C. H. Stokely, in which he traced the history of the bee and also gave a number of good hints on handling and raising the insects. J. B. Patten being editor of the "Reporter," H. G. Pope was called to the chair. This was the signal for a storm, and while the elements raged without, the Websters were no less tempestuous within, for until Horace Greeley could command his scattered senses, points of order and appeals were flying in the air so thick the President could scarcely be seen. Finally, however, quiet was restored and the paper presented. "Weather," "Donavenatha," "Reforming the Tramp," and "Coxey's Army," were some of the subjects treated. Taken as a whole, the edition will rank as one of the best of the year. Following the Critic's Report, a recess of ten minutes was taken, after which officers for the ensuing term were elected as follows: President, John Stingley; Vice-President, H. G. Pope; Recording Secretary, E. H. Webster; Corresponding Secretary, E. R. Farwell; Treasurer, J. W. Finley; Critic, G. C. Wheeler; Marshal, T. M. Robertson. Board of Directors to be elected yet. F. E. U.

April 6th.

It being time for the election of new Alpha Beta officers, the attendance was unusually large. The Society was opened by prayer and music. The music was furnished by the quartet, Messrs. Coffey, Harling, Ridenour, and Fryhofer. Sarah Cottrell then addressed the Society in an oration. E. A. Shellenbaum presented an essay on the North American Indian. The question for debate was, "Does fiction have a greater influence on modern civilization than history?" The affirmative, presented by C. C. Smith and Miss Jones, gave a clear exposition of the necessity of the ideals found in fiction, and the beneficial recreative influence going out from the reading of fiction. G. W. Fryhofer and Grace Secrest, on the negative, spoke of history as the basis of our laws and constitution, and as a written statement of the actual deeds of living men, thus representing human nature as it is, and not as some man makes it. As previously arranged, the debate was followed by a general discussion of the question. Scott's Ivanhoe was highly spoken of because it combined history and fiction. The judges decided in favor of the affirmative. Recess was followed by congregational singing. An interesting Gleaner was presented by Miss Ward. The principal articles were "Description of an Evening," "Poetry of Spring," and a "Report of a recent meeting of the Scientific Club." The election which followed was full of good feeling and humor. The Society feels that it could have done no better than selecting as it did: Stella Kimball, President; W. H. Phipps, Vice-President; J. E. Taylor, Recording Secretary; Lucy Waters, Corresponding Secretary; O. H. Halstead, Treasurer; and Inez Manchester, Marshal. G. W. F.

KANSAS EDUCATIONAL NOTES.

BY PROF. J. D. WALTERS.

There will be an exhibition of school work at the Summer Normal of Reno County.

Prof. V. L. Kellogg of the State University has returned from his trip to Germany.

Prof. A. S. Olin has been appointed Associate Professor of Pedagogy in the State University. The appointment will be well received throughout the State.

Prof. C. E. Bessey, of the chair of Botany of Nebraska State University, will deliver the annual address before the School of Pharmacy at the State University.

The Hutchinson high school has discovered a geological cabinet which had been bought for the use of the classes in mineralogy in 1879, and lost among rubbish and dirt ever since.

In an address before the Kansas City Engineer's Club, Dr. S. L. N. Foote of Argentine stated that he had discovered a "dead sure" plan to navigate the air, and asked that a committee be appointed to examine his scheme.

In 1887 there were nine graduates from the public schools of Reno County; in 1888, 43; in 1889, 47; in 1890, 50; in 1891, 30; in 1892, 59; in 1893, 68. Out of the 154 who took the final this year, probably 120 will pass—nearly double any previous year.

At the State Normal School, the other day, Judge L. B. Kellogg made an address upon the life and work of Hon. I. T. Goodnow, and Faculty and students joined in resolutions of respect. Money was subscribed in sufficient amount to secure a portrait.

More than 1,000 teachers were present at the sessions of the Northeast and Southeast Kansas Teachers' Association at Lawerence. Nearly 200 were from the two Kansas Citys. Among the subjects on the program was a lecture on "Social Problems" by Prof. A. W. Small of Chicago University.

The law provides that the district clerk shall not issue an order for the last month's salary till the teacher has handed in her report. The clerk should ask the teacher to send a copy of this report to the Superintendent, and he should also see that the classification register is properly filled.—*Supt. Lewis Scott of Marysville.*

The semi-annual convention of the County Superintendents of Kansas will be held at Hutchinson, on Tuesday, Wednesday and Thursday, May 22nd to 24th. The program will be published in our April number. Superintendent Chas. P. Dawson, of Reno, assures us that Hutchinson will give the Superintendents a hearty reception. She always does that to every convention.—*Western School Journal.*

The Executive Committee of the National Educational Association announces that the next meeting will be held at Asbury Park, New Jersey, July 6th to 13th,—the Trunk Line Association having granted the usual half rates, plus two dollars (membership fee), with extension of tickets for return to September 1st. In view of the delay caused by the unsuccessful negotiations with the Western Passenger Association for rates to Duluth, a very short time remains for preparation for the next meeting.

One can observe in some of the towns of our country that the walls of some of our best business houses and churches are defaced with vile pictures, words, and verses, done with pencil or chalk. In this way, too, the side walks and fences become teachers of vice. No doubt much of this is done at night. When will we come to know that a boy will learn more harm in one hour in an alley under the darkness of night, led on by an evil companion, than can be counteracted by an entire day by both parents and teacher?—*Marysville Educational Column.*

General Duties and Privileges.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturday, and no student may be absent without excuse. Unexcused absences are taken into account in calculating grades. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance and scholarship shows to each student his standing in the College.

Chapel exercises occupy 15 minutes before the meeting of classes each morning, and unnecessary absence from them is noted. On Sunday no services are held in the chapel, but students are urgently advised to attend the different churches of the city.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the Third- and Fourth-year Classes. Once a week all the classes meet, in their class rooms, for exercises in elocution and correct expression.

There are four prosperous literary societies which meet weekly in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the second and fourth Friday evenings of each month.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College, and a union meeting on the first Friday evening of each month.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greetings find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

A NEW BLACKBOARD COMPASS.

The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Kurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.

MANHATTAN ADVERTISEMENTS.

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DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

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SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

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THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

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Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

SUB-IRRIGATION—A CAUTION.

BY SECY. I. D. GRAHAM.

WHEREVER the idea of sub-irrigation may have originated, its present popularity as a matter of discussion seems to have grown out of successes in the greenhouse by means of it.

In the widespread interest which has been excited in anything pertaining to irrigation of late, many speakers and writers have advocated sub-irrigation by means of tiling sunk in the ground as an excellent means of solving various problems connected with the general subject.

As a result of this and in spite of the knowledge that this system would prove very expensive; that the conditions which it proved useful in the greenhouse were never to be met with elsewhere, and in spite of the fact that nobody tested its usefulness on the farm, information now comes through the press that farmers in Western Kansas have prepared and others are now perparing to use this system upon a somewhat extended scale, during the present season.

Some of the difficulties to be met and overcome by those who adopt sub-irrigation will be climatic, others mechanical. The climate in all regions where irrigation is necessary is excessively dry, and the evaporation enormously rapid. It follows, then, that if the dispersion of the water through the soil should be slow, the evaporation will take up the water before it shall have accomplished its purpose.

While the soil in the irrigation districts is very often of such a nature as to admit of the freest circulation of water, it will be seen that another difficulty will present itself in the gradual filling up of the pores of the tiling from the sediment in the water, and thus prevent that rapidity of movement so necessary in the growing season. Nor has it yet been established that any other application of water than in the manner provided by nature, viz., surface application, as in rain storms, will be as beneficial to plant growth.

Some conclusions lately arrived at by the Utah Experiment Station from experiments made there, are here quoted as directly in point. They are: "(1) Sub-irrigation, whether by large open drains or by the cement-pipe system, fails to supply moisture enough for growing crops. (2) The lateral movement of water was too slow to furnish the requisite supply for the evaporation of plants, being at the rate of a very few inches per day. (3) The sub-irrigated soil was warmer than the surface-irrigated soil. (4) The atmosphere around the plants, to the height of twelve inches, was warmer by sub-irrigation than by surface irrigation. (5) The sub-irrigated plat did not contain as much moisture as the surface-irrigated plat. (6) It is concluded that for this locality the lateral movement of water cannot be made rapid enough for maximum crop growth. (7) The system is too costly for ordinary farm crops."

While sub-irrigation by means of tiling or perforated pipes undoubtedly has its uses, and while it may find a valuable place in our agriculture, yet, in the absence of any widespread experience to prove that its place has been determined, the writer would caution farmers against undertaking it except in a very limited way until its value is better known.

The initial expense is considerable, and if the plant proves not to be highly effective, it can only be considered as so much loss.

NATURE'S TEACHINGS.

BY W. O. PETERSON, '96.

MUCH has been written and said about nature, her laws and teachings. I do not claim that I have anything new to add, and it is only with a view of freshening up your minds on this beautiful subject, that I attempt to write on "Nature's Teachings."

If we but take the time to study and observe nature in everything we shall find ourselves happily repaid. She will teach us many things which we are at a loss to find in books. All people will grow wise and prudent, if they follow her ample instructions. The more we learn of her the more we shall want to learn, and the better and nobler we will be in every sense of the word. Her wisdom is, indeed, a perpetual fountain, which, though we may continually draw, will never be exhausted.

You may not have the opportunities for obtaining a general education; you may not have the honor to dress in the fine garb of the classics, but you may have the privilege of studying God's own works, and in this way gain both knowledge and wisdom. All Creation is a ponderous book that you can never fully master, be you ever so industrious, ever so diligent, or ever so faithful.

Do you wish to be happy? Consider the lilies of the field. Do you wish to be industrious? Consider the ants and the bees. Do you wish to be pure? Look upon the sparkling morning dew. Do you wish to be lofty in spirit and thought? Gaze on the starry heavens. Is not your spirit lifted above the petty cares and troubles of this life, and do you not resolve to be truer and nobler?

Why should man so often be miserable when there is so much in nature to make him happy and joyful? When there is so much that will contribute to his comfort, if he will but lay hold on it? The reason so few delight in nature is, that their thoughts have never been directed in that channel by study and observation. The incessant care for the daily necessities of life among the poor, especially in the large cities, has a tendency to displace all thoughts in regard to nature. But the farmer and the tiller of the soil should, to my mind, be supremely happy. Providence showers his blessings all around him. Alas! how few there are who fully realize it.

Finally, let us strive to follow the teachings of nature more closely. Let us think more of her, and let her impart to us of her wisdom. It seems to me that the Creator intended that we should admire and reverence all his works, and in so doing we will give honor to his name and better ourselves at the same time.

Objects.

This College now accomplishes the objects of its endowment in several ways.

First, It gives a substantial education to men and women. Such general information and discipline of mind and character as help to make intelligent and useful citizens are offered in all its departments, while the students are kept in sympathy with the callings of the people.

Second, It teaches the sciences applied to the various industries of farm, shop, and home. Chemistry, botany, entomology, zoology, and mechanics are made prominent means of education to quicken observation and accurate judgment. Careful study of minerals, plants, and animals themselves illustrates and fixes the daily lessons. At the same time lessons in agriculture, horticulture, engineering, and household economy show the application of science; and all are enforced by actual experiment.

Third, It trains in the elements of the arts themselves, and imparts such skill as to make the hands ready instruments of thoughtful brains. The drill of the shops, gardens, farm, and household departments is made a part of a general education to usefulness, and insures a means of living to all who make good use of it. At the same time it preserves habits of industry and manual exertion, and cultivates a taste for rural and domestic pursuits.

Fourth, It strives to increase our experimental knowledge of agriculture and horticulture. The provision for extensive and accurate researches, made by establishing the Experiment Station as a distinct department of the College, offers assurance of more definite results than can be obtained by ordinary methods. The Professors of Agriculture, Horticulture, Chemistry, Botany, and Veterinary Science, together with the President of the College, form the Experiment Station Council, by authority of which experiments are undertaken and carried on in the several departments, under the special supervision of the professors. These touch "the physiology of plants and animals; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage-plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable."

The bulletins of the Station, issued at least as often as once in three months, are sent, according to law, free of postage, to all newspapers in the State, and "to such individuals actually engaged in farming as may request the same, and as far as the means of the Station will permit." Correspondence with reference to bulletins and experiments is welcomed, and may be addressed to the several members of the Council.

Fifth, It seeks to extend the influence of knowledge in practical affairs beyond the College itself. For this purpose, farmers' institutes have been organized in more than 40 counties of the State, in which from two to four members of the Faculty share with the people in lectures, essays, and discussions upon topics of most interest to farmers and their families. These institutes, held for twelve years past, have brought the College into direct sympathy with the people and their work, so as to make possible a general dissemination of the truths presented. The members of the Faculty desire correspondence as to farmers' institutes or any questions of practical interest in agriculture or related sciences. The INDUSTRIALIST, published weekly, and edited by Faculty and students, gives a wide circulation to matters of similar interest in the College.

To serve a similar end, a course of thirty lectures is given at the College during two weeks in February of each year, to which farmers from all parts of the State are invited. Members of the Faculty are also prominently connected with State associations for the promotion of agriculture, horticulture, the natural sciences, and education in general.

Education for the Farmer.

At a recent meeting of the Dutchess County (N. Y.) Farmer's Club, Mr. Edwin T. Powell delivered an address on the question "Will a Higher Education Be of Advantage to a Young Man Who Intends to Follow the Profession of Farming?" There is much in this address that is deserving of thoughtful consideration. Mr. Powell said:—

"If I were asked what is the greatest essential to success in farming, I should say knowledge. The next greatest essential is the ability to apply this knowledge in such direction or directions that the greatest results will be most economically produced.

"This, then, is success, or the true basis of success, for if one has but mastered and inherited or cultivated these two elements, success cannot but be certain.

"The ability to apply knowledge so as to produce profitable results may be cultivated to a great extent, but is or is not born in us, as the case may be, with each individual.

"Some people are more brilliant than others; some have the ability to produce exquisite music from the violin or piano, some can write charming poetry and some paint beautiful pictures, while with others, who may have just as much knowledge of the harmony of chords on a piano, of the meter of verse and construction of language, or that certain colors will give the desired effect, the ability to apply this knowledge to produce these results is lacking.

"The ability to do these things is an inherited acquirement. It can be cultivated to a certain extent more in some than in others, but unless some of it is born in one he may work until doom's day and accomplish but little.

"I am so fully convinced that what is bred in the bone is the making of a man that I think it would not be safe to say that a higher education would be of advantage to all young men who intend to follow the profession of farming.

"I would change it and say a higher education will be of advantage to all young men who ought to follow the pursuit of farming.

"The word 'profession' used in this sense is very distasteful to me. A man who farms the farmer follows farming as a profession, but he who works 365 days in the year, Sundays and nights included, and makes farming his chief business, follows it as a pursuit.

"The condition of farming has changed wonderfully in the past quarter of a century, but the knowledge of farmers to meet these changed conditions has not grown as rapidly. New land, increased production beyond the needs of consumption, improved methods and machinery in the production of wheat and the manufacture of flour and cheap freight rates have brought down the price of wheat, so that New York farmers can find no profit in raising it with the yields commonly obtained.

"The time has long since passed when brawn must give place to brain on the farm. A higher education, used in the right direction, can accomplish more than mere brute force.

"Hard work is neccessary on any farm, but with intelligent direction the labor can often be lightened or applied in a manner which will accomplish greater results. A higher education is one that teaches the why as well as the how of doing anything.

"Under the old regime of farming the farmer knew how to plant corn and wheat, but with a higher education he knows why cultivation should be shallow for corn, and a deep and compact seed-bed for wheat.

"A person obtains a higher education by close observation of his own and other methods, than by reading and thinking.

"A young man who intends to pursue farming as an occupation needs to know much more than his grandfather did at the same age if he expects to make as great a success.

"Fifty years ago we knew nothing about fungous diseases of grains and fruits, which of late years have proved so disastrous. Insects caused little trouble then, but every fruit-grower of the present time gives much thought to preventing their ravages.

"Fifty years ago one could tickle the earth with a hoe and she would laugh with a harvest, but now it requires the highest cultivation and heavy fertilization to produce a profitable crop.

"The conditions which now confront the farmer are much changed, and to successfully meet and overcome the new obstacles to success a greater learning is required."

Farm Life as It Should Be.

If the life on the farm does not bring enjoyment, it is probably due to a lack of appreciation. In all occupations there are times when things apparently grow monotonous, and then arise hopes that are rarely realized. The farmer envies the city man and the city man envies the farmer, yet, were they to exchange places, it would not be long before both would be sorry and again long for their old spheres. Continued association with the delights of the farm dulls the glories and beauties that are so visible to outsiders. The adage that "Spring would be but gloomy weather, if we had nothing else but spring," is easily verified in all walks of life. The farmer who lives from year to year without introducing any innovations on the farm makes life a humdrum existence, and fails to erect a single monument that will endear the old home to his children.

There is continual opportunity to make the old homestead the "dearest spot on earth." It can be made cheerful-looking, beautiful with growing trees and flowering shrubs; in fact, it may be made so attractive that passers-by will remark the snug and cosy home, so suggestive of prosperity and true happiness. Each year new features can be added that will make the farmer and his family proud of their home and its surroundings. Life on the farm affords great possibilities and great opportunities for happiness. How many farmers fully appreciate or understand the compensations of farm life? An exchange says:—

"Some of the compensations of farm life not always realized, but usually within easy reach of the exercise of wise forethought, are an abundance of the choicest products of the farm for the table. A small plot of berries will furnish all that can be used for ten weeks in succession, and a few grapevines will follow soon after for a period almost as long. The garden furnishes the best and freshest of vegetables constantly through the season. The dairy and poultry-yard pour their treasures upon his table, and the flesh of his flocks and herds supply him with meats. In all this abundance there is no adulteration, no chalk and water in his milk, oleomargarine in his butter, or cotton-seed oil in his lard. His milk has not been slopped from side to side of a milk can under a torrid sun, nor his fruits and vegetables shipped a few hundred miles and kept standing over night at a grocery. Verily, the farmer who will may eat the choicest viands at small cost."

How many farm families enjoy as they should the blessings of the dairy, poultry-yard, and a good garden? There is a new song entitled "Nothing is too Rich for the Baby," and as popular a refrain would be "There is nothing too Good for the Farmer." Let the farmer grasp the opportunity nature spreads out so lavishly before him, and bring the sunshine of prosperity, and gladness into every nook of the old homestead, so that its memories will be revived, endeared to every member of the family, and to which their descendants may point with pride.

When farming is characterized by the same skill and industrious economy as other vocations, it always proves a profitable success. There is no calling that results in better physical development than farming, no vocation in life where the natural surroundings bring as many lessons that help man's moral and spiritual development. More social enjoyment is necessary on the farm, and there is room for more home culture of the intellect. Newspapers and magazines, which all may become interested in, may serve the double purpose of entertaining and instructing. Home culture has been the first step to many a noble career.

Let the farm life be full of enjoyment; let the young people have their holiday times and indulge in innocent laughter and pleasures. It is said he who makes two blades of grass grow where one grew before is a public benefactor. How rue, then, is it that he who brings happiness and joy to the hearts of others adds peace and content to his own life.

Farm life should not only be the most independent, but the most joyous and happy existence on earth.—*Baltimore Sun.*

The Forehanded Man.

The forehanded farmer always has something to sell. His crops are varied. He hesitates to put too many eggs into one basket, or to give too much attention to one particular crop. He needs to produce plenty of live stock and to have it ready for sale at pretty much any time, but particularly at the time when his taxes or other well-defined and well-understood payments come due. His hogs form a staple crop, but he can without much difficulty raise as well a few colts and calves every year, a bunch of lambs or of wethers, an acre or two of potatoes and a crop of turnips to follow the early ones. He has a good flock of fowls and probably one of turkeys, of ducks or of geese, either of which will afford spending money for the lesser expenses of the household every month of the year. Being forehanded, he keeps a few good milch cows, the female calves from which, if by a good sire, are always in demand, because good milkers, and the steers may be either killed in the winter for home use or sold for beef. Then his folks are apt at butter making, and good butter is always in demand at paying prices; and his skim and butter milk make an admirable food for colts and calves, poultry and pigs, and the more of it he has the better. His aim must be to put into stock as much as possible to consume all his farm produces; for the forehanded farmer cannot afford to haul hay, or corn, or wheat to town; his stock must carry it there in a manufactured form, and therefore at a minimum of expense. The days of all grain, tocacco, cotton, hemp, etc. etc., are passed. Small farms, diversified farming, rotation of crops, and everything done well is now the order of the day. It is that or nothing.—*Colman's Rural World.*

Do Not Overwork.

The season is at hand in which the farmer will put in twelve or fifteen hours a day at work and see that every hand on the farm does the same. He will hardly stop during that time long enough to eat his food properly, and take no time to either read or think. Is this good policy? Is it either wise, prudent, or profitable? The women in the house will be compelled to work hours longer than the men outside. Will that pay? Some of these are mothers and have duties and responsibilities as such, which if found in any kind of stock would justify a relief from work. Surely the farmer will not overwork his wife more than he would his stock; or himself to a point where thinking is out of the question, and planning impossible. The average farmer, however, will aim at nothing short of getting the work done, no matter how or what the consequences, so long as it is done. It is a foolhardy policy. It will not pay either in money or health. Let us take time to think, to read, to plan and to live. There are duties in these regards that we owe to ourselves, our wives, our progeny, and our success, that are not met with in brute force.—*Colman's Rural World.*

Grounds and Buildings.

The College grounds and buildings, occupying an elevation at the western limits of the city of Manhattan, and facing towards the city, are beautiful in location. The grounds include an irregular plat in the midst of a fine farm, with orchard, vineyard, and sample gardens attached, the whole being surrounded by a durable stone walls. The grounds are tastefully laid out and extensively planted, according to the design of a professional landscape gardener, while well-graveled drives and good walks lead to the various buildings. All of these are of the famed Manhattan limestone, of simple but neat styles of architecture, and admirably suited to their use. All recitation rooms are excellently lighted and ventilated, and are all heated by steam or hot water. A complete system of sewerage has been provided.

College, 152x250 feet in extreme dimensions, arranged in three distinct structures, with connecting corridors. This building contains, in its two stories and basement, offices, reception room, cloak rooms, studies, chapel, library, reading room, kitchen laboratory and dairy, sewing room, society rooms, printing office, and twelve class rooms.

Chemical Laboratory, one story, 26x90 and 46x75 feet of floor space, in form of a cross. It contains eight rooms, occupied by the Department of Chemistry and Mineralogy.

Mechanics' Hall, 39x103 feet, two stories, and 40x80 feet, one story, occupied by wood and iron shops music rooms, iron foundry, lumber rooms, etc., in addition.

Horticultural Hall, 32x80 feet, one story and cellar, having cabinet room, class room, and storage, with greenhouse attached.

Horticultural and Entomological Laboratory, with propagating houses attached.

Museum Building, 46x96 feet, and two stories high. This building, which has served many purposes, is now fitted for an armory, drill room, and veterinary laboratory below, and for class room and laboratory for Department of Botany and Museum of Natural History above.

Science Hall, containing the library, with ample reading rooms; class rooms and laboratories, and cabinet room for zoology, entomology, and botany; and suitable rooms for the various College societies.

Appropriation is also made for a central steam plant, to furnish heat and power for all the buildings. This plant is to cost $14,000, and will be completed in the fall of 1893.

The farm barn is a double but connected stone structure, 50x75 feet and 48x96 feet, with an addition of sheds and experimental pens 40x50 feet. A basement, having stables for 75 head of cattle, silos, engine room, and granaries, underlies the entire structure.

The horticultural barn is a stone building, containing storeroom, granary, and stables for several horses.

The foundries, lumber house, implement house, piggery, and various out-buildings are of wood.

Two stone dwellings, occupied by the President and the Professor of Agriculture.

General Duties and Privileges.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturday, and no student may be absent without excuse. Unexcused absences are taken into account in calculating grades. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance and scholarship shows to each student his standing in the College.

Chapel exercises occupy 15 minutes before the meeting of classes each morning, and unnecessary absence from them is noted. On Sunday no services are held in the chapel, but students are urgently advised to attend the different churches of the city.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the Third- and Fourth-year Classes. Once a week all the classes meet, in their class rooms, for exercises in elocution and correct expression.

There are four prosperous literary societies which meet weekly in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the second and fourth Friday evenings of each month.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College, and a union meeting on the first Friday evening of each month.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greetings find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Nora Tennison, First-year, drops out of Classes this week.

Minnie Leicester attended Chapel exercises Friday afternoon.

Secy. Graham made a business trip to Topeka on Wednesday.

Fred Hornbeck, of Silver Lake, visited Chapel Monday morning.

Marie Cavenaugh visited College with Olive Wilson on Friday.

Asssitant Chemist Breese goes to Elmdale today, returning Monday.

Prof. Mayo addresses the Teachers' Association at Ellsworth this evening.

John P. Fritts, of the *Mercury*, was at College Friday, and attended afternoon exercises.

Mrs. Jackson visited Chapel exercises Friday afternoon with her daughters, Lena and Emma.

Mrs. Col. Whittaker, of Topeka, was the guest of Secretary and Mrs. Graham during the week.

President Fairchild had a conference with the Board of Public Works at Topeka on Thursday.

Prof. Failyer is in Garden City this week perfecting arrangements for work at the Irrigation Station.

Mr. D. E. Hunt, of Topeka, general agent for the United States School Furniture Co., visited College on Monday.

Mrs. Kellerman has an interesting article, copiously illustrated, on "Leaf Variation" in *Vick's Magazine* for April.

The Ionian Society will entertain its friends next Friday evening in its fifth annual Exhibition. A good program is promised.

Mr. J. F. Meyer, of Topeka, representing Wyckoff, Seamans, & Benedict, the type-writer manufacturers, was a visitor yesterday.

Of the Third-year girls, all but three have at some time or other had the measles, and two of these three are now wrestling with disease.

The Ladies' Aid Society of the Congregational Church have the refusal of the Commencement Day dinner this year, theirs being the first and only application.

The Cooking Class has tasted freely of the sweets in the box of fine maple sugar recently received by Mrs. Kedzie from Dr. Kedzie of the Michigan Agricultural College.

The Class of '94 promise a new departure in Class Day programs which will be appreciated by the guests, but the nature of that departure the writer, as confidential adviser to the Committee, cannot divulge.

Rev. W. Chalfant, returned missionary from China, called at the College, Tuesday, with Rev. Phipps of Manhattan. He expressed great admiration for the location and development of the College, and showed much interest in the various departments.

Somebody upon mischief bent forced an entrance into Science Hall on Sunday and deliberately overturned a large pile of tiles used in the construction of the building, breaking many. Ulrich Bros., the contractors, offer a reward of $25 for information leading to the detection of the trespasssers.

The measles are responsible for many absences from classes this week. Among the afflicted ones are E. L. Frowe, Dora Thompson, Flora Day, R. J. Barnett, W. A. Cavenaugh, A. M. Dahl, J. W. Finley, W. H. Roberts, and C. Sanderson, with many other cases in prospect. The disease is about of the usual character, none of the cases, so far as known, being dangerous.

The hour of public exercises yesterday afternoon was occupied by the fourth division of the Third-years with oratious as follows: "Originality." C. A. Johnson; "Steps Toward Good Government," C. V. Holsinger; "A Day Without Friction," Alice Quintard; "Self Dependence," J. B. S. Norton; "The Necessity of Municipal Reform," J. J. Johnson; "Plagiarism," Ethel Patten; "Educational Influences of Rural Life," F. E. Rader; "Change Inevitable," Mabel Selby; "Cranks," C. S. McCauley.

Prof. Hitchcock has just issued a thirty-six page pamphlet entitled "A Key to the Spring Flora of Manhattan," for the use of the beginners in botany. Through the kindness of Dr. N. L. Britton, the author is enabled to present the nomenclature and arrangement as they will probably appear in the new check list now being prepared by a committee of the American Association for the Advancement of Science. The work is for beginners only, experience having shown that Gray's Manual, though an excellent work for advanced students, is too extended for students who can devote but ten weeks to the study of elementary botany.

Cadet officers for the term have been appointed as follows: Captain, E. L. Frowe: First Lieutennant, C. C. Smith; Second Lieutenant J. V. Patten; additional Second Lieutenant, D. Timbers; First Sergeant, F. R. Jolly; Second Sergeant. W. A. Cavenaugh; Third Sergeant, I. A. Robertson; Fourth Sergeant, W. A. Painter; Fifth Sergeant, S. A. McDowell; First Corporal, C. Cole; Second Corporal, A. L. Peter; Third Corporal, H. G. Johnson; Fourth Corporal, B. Kirkpatrick; Fifth Corporal, F. E. Uhl; Sixth Corporal, O. E. Noble; Trumpeters, L. W. Pursel and C. S. Evans. After the recruits have been drilled a week or two longer, another company will be organized.

GRADUATES AND FORMER STUDENTS.

R. J. Brock, '91, visited Chapel Friday afternoon.

Lettie Rigney, student last term, visited Chapel Friday afternoon.

Olive Drake, Second-year, finds it necessary to leave classes for the rest of the term.

Mary Finley, in Third-year classes last term, attended Chapel Thursday morning.

W. K. Eckman, '79, lumber dealer, writes of change of base from Longview, Tex., to Logansport, La.

J. C. Wilkin, Third-year, who dropped out of College two weeks ago, writes from Bow-Creek of busy times on the farm. He hopes to return next year.

L. C. Criner, '92, though not able to visit College during Commencement, expects to come here in August to take the examination for State certificate, for which he has applied.

Gertrude Coburn, '91, sends an elegant pamphlet, descriptive of the Stout Manual Training School, Menominee, Wis., in which she directs the department of Household Economy.

K. C. Davis, '91, for two years principal of the Austin (Minn.) schools, has been re-elected. He will have charge of the Normal School at Fairmont, Minn., during the summer vacation.

W. J. Towne, Third-year in 1890-91, now a member of the class of '95, Polytechnic Institute, Troy, N. Y., and Business Manager of the *Polytechnic*, asks the INDUSTRIALIST for exchange. Request granted.

C. A. Campbell, '91, in an interesting letter from Auburn, N. Y., speaks of his election, last week, as Instructor in Logic and Rhetoric in the Auburn Theological Seminary. He hopes to be here Commencement week.

C. G. Clarke, '88, a member of the Junior Class at Yale, is the winner of the Ten Eyck prize of $60 in the Class Exhibition. A local paper in an account of the exercises, says: "Mr. Clement G. Clarke, of Manhattan, Kans., then followed with by far the most masterly effort of the exhibition. His subject was 'Milton, Thou Shouldst be Living at This Hour.' He spoke in a most forcible and characteristic manner, and delineated the character of Milton in a most interesting style. He said that if Milton were living at this hour the effect of such a personality could not fail to produce a higher spirit of purity among the young men of the day."

At the County Teachers' meeting at Lyons, March 17th, Bertha Bachellor, '88, presented the negative in a debate on the question "Should the Teacher be a Social Leader?" by a set of caricatures of which a Lyons paper says: "They supplemented her very able and convincing speech and consisted of two scenes, the first representing the social leader sitting partly on two chairs, with a person on each side pulling in opposite directions. In the second scene the representatives of the different shades of the social scale had succeeded in withdrawing the chairs from under the dissipated social leader, and we observed him sitting flat on the floor with lower limbs extended, the attitude in which Miss Bacheller left her opponents."

Shoe Business For Sale.

I will sell for cash my stock of shoes and fixtures. Stock in good shape. Trade good and well established. Best location in the city. This is a splendid business opportunity, and at the same time one can enjoy the College and school advantages of Manhattan. Address, Leslie H. Smith, Manhattan, Kansas.

Notes From the College Orchards and Gardens.

Two bushels of peach pits, which had been kept during the winter packed in moist sand in one of the cellars, were planted recently between the rows in the experimental apple orchard. They are now coming up, and promise a fine stand. They are intended for use in instructing the industrial boys in budding. This is something which has not, heretofore, been attempted, and it will make a valuable addition to the course of instruction here in the department. A thousand pear seedlings have also been set for similar use.

One thing has been proved this spring beyond a doubt, and that is, the Tartarian honeysuckle, *Lonicera Tartarica*, is capable of standing severe cold when almost in leaf, without apparently being injured in the least. Some of the bushes on the grounds lacked but little of being in full leaf during the cold weather in March, when the thermometer stood at only 10° above zero, yet when the warm weather came again, they went ahead as though nothing had happened and are now in blossom. Barring the evergreens, they were the first things on the grounds to show a fine green appearance.

Unless the present cold, windy weather continues to hold out so long as to interfere with pollination, apples ought certainly be plentiful in this neighborhood; for every tree, early and late alike, is loaded with blossoms.

The potatoes of the first planting have appeared and are growing finely. As usual the lots from first crop seed appeared a week or so in advance of those from second crop seed of the same variety.

The grape-vines in the experimental vineyard, which were covered with earth last fall for protection, have been uncovered and tied up to the trellis. The prospect, so far as can be determined so early in the season, is very promising.

One of the most beautiful things on the grounds at present is the row of hardy phlox, *Phlox subulata*, just east of the propagating houses. There are three colors, white, lavender, and dark pink, and the row is just now a mat of blossoms. F. C. SEARS.

Another Pioneer Gone.

News of the death of Ex. Gov. James M. Harvey reminds the friends of the College of an important service rendered the College by Gov. Harvey in 1867, when he personally inspected and appraised all the lands belonging to the College, amounting to over 80-000 acres. There is in the Secretary's Office a book recording in his own hand-writing the description, quality, and price of each quarter section. Upon the last page is the following: "James M. Harvey of Riley County, being duly sworn, deposes and says that having been employed by the Board of Regents of the Kansas State Agricultural College, he has visited and identified the lands belonging to said College and has made the preceding descriptive list and valuation thereof, and that to the best of his knowledge and belief, the description is correct and the valuation fair and just." This statement is signed before a Notary Public on the 27th of July, 1867.

Governor Harvey retained his interest in the College through life, three of his children having been students here.

Scientific Club.

April 13th.

President Nichols called the meeting to order. The minutes of the last meeting were read and approved.

Dr. Mayo presented the subject of Tuberculosis, discussing its hereditability, the relation of tuberculosis of cattle to human tuberculosis, the transmission of the disease by means of milk and meat, the use of tuberculin to detect the disease in cattle, and measures necessary to control the disease. The discussion following brought out methods of weeding out diseased cattle from herds, the percentage of diseased cattle in several large herds, and a comparison of restrictions on the sale of diseased meat in Europe and in America.

Under voluntary reports, Prof. Hitchcock exhibited a plant of Indian corn growing in water, calling attention to the difference between water roots and land roots. He also gave a method of trisecting an angle. Dr. Mayo reported experience with a young muskrat. Prof. Mason showed twigs of a pseudo Blackman plum, the blossoms of which are all pistillate, and have never been known to be fertilized with pollen from any other species. Prof. Willard spoke of the disorganization of tin at a very low temperature, and its restoration to its original condition by heat; also of many instances of the absence of chemical action at low temperature. Miss Lucy Waters was elected to membership. Adjournment.

GRACE M. CLARK, Secretary.

COLLEGE ORGANIZATIONS.

April 13th.

The Alpha Beta Society and about a score of visitors, including several A. B. graduates, assembled promptly at 2:30, President Smith in the chair. After prayer by Miss Moore, the Society listened to a quartette, "On the Levee by the River-side," by Messrs. Fryhofer, Ridenour, Harling, and Coffey, J. B. S. Norton committee. The Spring term complement of officers was installed, and the Society had the pleasure of listening to valedictory and inaugural from outgoing and in-coming Presidents, the sentiment of both being, "First. last, and all the time, an A. B." Declamation by Clara Wilson. Fannie Parkinson read a very interesting essay, "Saturday Night," comparing the termination of the laborer's toil and his Sabbath of rest to the ending of all earthly labor and the rest which follows. Longfellow's "Two Angels" was beautifully read by Jennie R. Smith. Debate on the practical question, "Which is more injurious to the farmer, the sunflower or the chinch-bug?" followed. Hugo Halstead and Florence Harling showed the relative extent, the comparative locomotive, reproductive, and staying qualities of each, the erratic habit of the insect, while the weed "ye always have with you;" showed the ease with which the chinch-bug could be exterminated by Prof. Snow's remedy. Miss Harling enforced her argument by the exhibition of both weed and chinch-bug. J. J. Fryhofer and Inez Manchester showed by statistics the destructiveness of the chinch-bug upon growing crops, quoting from Prof. Riley, and Prof. Snow of Kansas State University. A careful farmer will not tolerate the sunflower upon his premises, while he is helpless before the onslaught of the chinch-bug, seeing the fruit of the season's labor destroyed in a few days by these insects; showed that sunflowers are positively beneficial, quoting the seed at $1 per bushel in open market, aside from the æsthetic value of the flowers. The chinch bug is neither decorative nor valua-

ble. The Judges, Misses St. John and McDonald, and Mr. Thayer, decided in favor of the negative. The Gleaner, with the Society motto, *Lente sed certe progredimur*, was presented by John E. Taylor. After recess, the Society listened with pleasure to a duet "The Gates Ajar," by Fannie Parkinson and Clara Newell, Grace A. Secrest accompanying. Extemporaneous speaking was followed by an interesting business session and report of Critic. An organ and violin duet by Lorena Clemons and J. C. Christensen was followed by roll-call and adjournment.

L. H. W.

April 13th.

The Ionians were called to order by Vice-President Harman. The exercises were opened by singing. Mary Lyman led in devotion. The installation of officers then took place, and President Frisbie responded to the call for inaugural in her usual easy manner. Ida Walters, Ary Johnson, Fannie Cornell, and Mabel Gillespie were initiated, after which the program was opened by a declamation by Mabel Farwell. Rena Helder's piano solo was appreciated much and received a hearty encore. Ida Pape's essay entitled "Andromeda" showed careful preparation. Minnie Copeland's original story, "Felece, the Beautiful Mermaid," was well read and showed the imaginative power of the author. This was followed by a well-delivered piano solo by Mable Farwell. One of the best editions of the Oracle which we have had this year was presented by Harriet Vandivert. Kate Pierce's vocal solo, "The Heart Bowed Down," preceded the debate on the question, "Resolved, that the old bachelors should be taxed to support the old maids," presented by Mabel Selby and Miss Bayles on the affirmative, and by Dora Thompson and Hortensia Harman on the negative. The affirmative argued that it could be proved by the Bible that woman was made for man, that she was not independent, and that it was man's duty to provide for her, and that since married men had their wives to take care of, it should be the duty of the old bachelors to take care of the old maids. Furthermore, if they tried to support themselves, they couldn't get good wages, and were sure to become dependent in time. The negative opened by mentioning the classes of people we are now taxed to support, and thought that the woman bachelor of to-day did not apply. If they were helped it would encourage others to become old maids, and the country would be overrun with them. The fact that the women work cheaper than men has thrown a great many men out of employment, and they could not afford to support old maids. The Judges, Messrs. Staver, Hayes, and Adams, decided two to one in favor of the affirmative. Phœbe Turner favored the Society with a piano solo, after which members of the Society and visitors joined in the extemporaneous speeches upon the questions "The Revised Course," and "Our Coming Annual." This closed our program one of the most enjoyable of the year.

M. E. S.

April 14th.

The Websters were called to order at 7:30 by Sec. Royer, who called I. A. Robertson to the chair. Following roll-call after which H. G. Pope led in prayer, the officers of the Spring Term were inaugurated and took their respective positions. "Should the students have partisan views in politics while in College?" was the question for debate. F. W. Ames in introducing the affirmative said that all students in studying, would naturally have their own views, and so it would be in politics. He said those that have no opinion are not fit to vote. There is not a part of the government, but what all form an opinion about and these must be partisan views. F. J. Smith said in defense that if we come to College with our own views we will read but one side of the political questions. He said that too many times we are guided by our partisan views. We are here, he said, to study politics, as well as other things, and we cannot study them fairly with partisan views. In continuing the affirmative Morse said there would be no life in College if politics did not take a part. The majority, he said, are voters and most have views. R. P. Newman in speaking further on the negative said that if we have partisan views we will listen to argument only on that side. In summing up the affirmative, F. W. Ames said that we could not study politics as laid down in the course without our own partisan views, and that it was the only way to find the right view. F. J. Smith in closing negative said in all branches of science which take deep thought cannot be correctly studied with partisan views; so it is in politics. The Society decided in favor of the negative. The theme of E. C. Trembley's Oration was, "We should all have an interest in other's work." It was an excellent production, and showed careful study and preparation. A. E. Fuhlhage's essay on "Industry and Indolence," was well written and gave us many new thoughts. A declamation by R. W. Ashbrook on "Patriotism" was well rendered. Recess followed, after which Geo. Forsyth gave a discussion on "Mound builders," in which he told of their supposed origin and the character of the people. S. A. McDowell then gave a discussion on "Review of Reviews," a magazine, pointing out some of its good qualities. Critic's Report. Under unfinished business the following Board of Directors were elected: I. A. Robertson, J. W. Evans, J. B. Harman, J. B. Dorman, and M. Wheeler.

E. R. F.

April, 14th.

At eight oclock sharp Pres. Hutchings called the Hamilton Society to order, and after roll-call which showed a good attendance, W. O. Peterson led in devotion. Under inauguration of officers, those elected last week were inaugurated; and Pres. Scheel called to the chair. Mr. Hutchings responded to the call for a valedictory in his usual easy manner, and at the close of his speech he presented a beautiful mallet and gavel to the Society as a token of his appreciation of the kindness they had shown him. Pres. Scheel was now called upon for an inaugural to which he responded in a few well-chosen words in which he thanked the Society for the honor conferred upon him, and asked the hearty co-operation of all the members to make this term's work better than any before. The program of the evening was now taken up and Guy Whitson read a well-written essay upon the history of slavery. Mr. F. G. Dial's declamation, entitled "Roll Cali," was very well delivered. It was a war poem and, as usual, the Society listened very attentively. The debate upon the question, "Resolved, that Cleveland's Tariff policy will defeat him in the next Presidential election, and result in the election of McKinley," was taken up. The two speakers on the negative being absent, Messrs. J. W. Holland and Bayless were appointed to take their places. F. B. Dodds opened the debate on the affirmative by showing that the McKinley bill was one of the best bills ever passed for the laboring class. He attributed the recent financial panic to Cleveland's policy, and declared that the manufacturers were afraid to go on with their work for fear the administration would carry out its free trade policy. Mr. Holland took the floor in defence of the negative and immediately cited the audience to the fact that McKinley's bill was at its zenith at the time of Cleveland's election, thus showing that the bill was not what the people wanted. He claimed that Cleveland's policy did not seriously conflict with this bill: but he was in favor of Tariff for revenue and strongly in favor of civil service reform. Mr. Phillbrook, the second speaker on the affirmative, showed that Cleveland had done nothing but veto in his first term, and thus far in this term nothing of importance has been accomplished. He cited us to the results of last fall's election to show that Cleveland's star is waning. Mr. Bayless the next speaker brought out some good points, and said that Cleveland was not to blame for the legislature not acting. Mr. Dodds in closing became quite eloquent, and in speaking of Cleveland's Civil Service Reform cited the society to the appointment of an ex-rebel as a Judge in the Supreme Court. Mr. Holland in his last remarks declared that the panic of last year was not brought about suddenly, but had been brewing for twenty-five years. The Society decided in favor of the affirmative. B. W. Conrad as music committee called on Mr. C. S. Pope to perform with his music box, and for about ten minutes he turned a crank and ground out music enough to make us twice glad. After recess O. Bentz delivered a well written oration upon, "Might makes Right." It showed careful preparation and was very instructive as he showed that from time immemorial might had ruled and was ruling yet. Geo. Doll's discussion upon firecrackers was very interesting to all. He told how they were made and stated that they were manufactured quite extensively in New Jersey, but China furnished most of them. J. J. Johnson's select reading entitled "Liberalism" was quite amusing. News of the week by C. E. Pincomb. This closed the program and "unfinished business" was taken up, and under this head the out going Treasurer, J. Poole, made his report which showed the Society in good financial circumstances. Under new business Messrs. Frowe, Conrad and H. G. Johnson were apointed as a committee to furnish music at all regular sessions of the Society. Report of Critic.

F. A. D.

Terms of Admission.

Applicants for admission at the beginning of the College year must be at least 14 years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic, geography, English grammar, and United States history. Those applying later in the year must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of a term, in order to advance with the class from the first.

The following diplomas and certificates will be received in lieu of entrance examinations:—

1st. Diplomas received on the completion of a county course of study which has been approved by the Faculty, when properly signed by the county superintendent.

2nd. Certificates of passing the grammar grade in any city school with a course of study approved by the Faculty, when properly signed by the city superintendent.

3rd. Kansas teachers' certificates issued by the county board of examiners, showing that the above-named studies have been passed with a grade of at least 70 per cent.

The Faculty have approved the course of study adopted by the following counties and cities; others may be submitted for approval at any time:—

COUNTIES.

Allen,	Elk,	Linn,	Reno,
Anderson,	Ellis,	Marshall,	Rice,
Barber,	Ford,	Marion,	Riley,
Brown,	Geary,	McPherson,	Rooks,
Bourbon,	Greenwood,	Miama,	Rush,
Butler,	Harper,	Mitchell,	Russell,
Chase,	Harvey,	Montgomery,	Saline,
Cherokee,	Jackson,	Nemaha,	Shawnee,
Clay,	Jefferson,	Neosho,	Sumner,
Cloud,	Jewell,	Osage,	Wabaunsee,
Cowley,	Johnson,	Osborne,	Washington,
Dickinson,	Kingman,	Ottawa,	Wilson,
Doniphan,	Labette,	Pottawatomie,	Woodson,
Douglass,	Leavenworth,	Republic,	Wyandotte.

CITIES.

Abilene,	Concordia,	Kanapolis,	Oswego,
Anthony,	El Dorado,	Kansas City,	Ottawa,
Arkansas City,	Emporia,	Kingman,	Paola,
Atchison,	Eureka,	Larned,	Parsons,
Augusta,	Fort Scott,	Lawrence,	Pomona,
Beloit,	Fredonia,	Leavenworth,	Russell,
Burlington,	Gaylord,	Lyons,	Salina,
Caldwell,	Girard,	Manhattan,	Seneca,
Chanute,	Great Bend,	Mankato,	Solomon City,
Cherryvale,	Hiawatha,	McPherson,	Topeka,
Chetopa,	Holton,	Minneapolis,	Washington,
Clay Center,	Horton,	Newton,	Wellington,
Clifton,	Hutchinson,	Olathe,	Winfield,
Coffeyville,	Independence,	Osage City,	Wichita.
Columbus,	Junction City,	Osborne,	

Applicants over 18 years of age, who, for lack of advantages, are unable to pass full examination, may be received on special conditions.

Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions, upon presenting a certificate from the proper officer, showing that their course has been equivalent to that given here.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

A NEW BLACKBOARD COMPASS.

The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Kurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.

MANHATTAN ADVERTISEMENTS.

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DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

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SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

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THE INDUSTRIALIST.

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Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

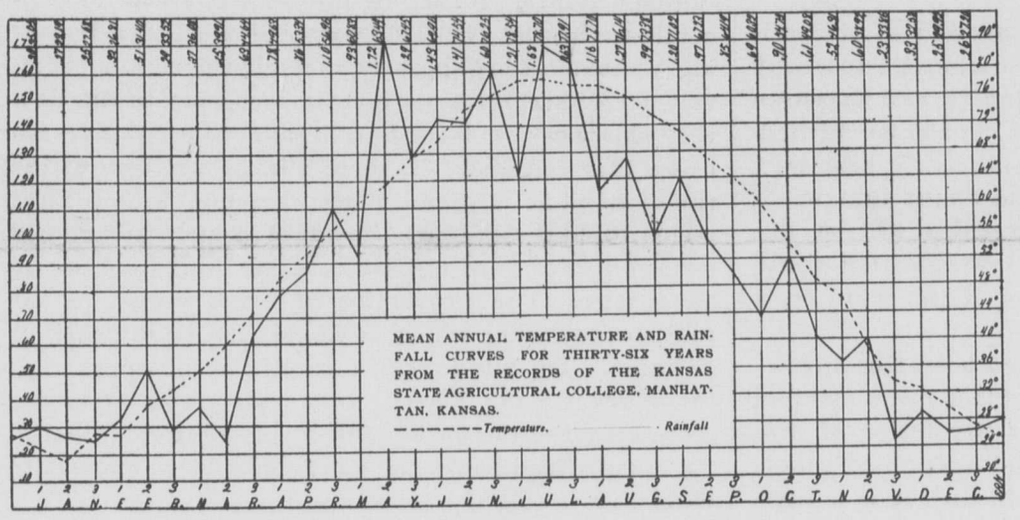
ANNUAL RAIN-FALL AND TEMPERATURE.

BY PROF. E. R. NICHOLS.

IN the engraving, the continuous line shows the mean annual rain-fall divided into ten-day periods. The vertical lines indicate the ten-day periods, the figures 1,2,and 3 at the bottom of the lines indicating respectively the first ten, second ten, and remaining days of the month abbreviated just below. The horizontal lines represent tenths of an inch of rain-fall, with the number of tenths at the left, or four degrees of temperature with the number of degrees at the right. The dotted line is the mean annual temperature curve. The upper row of figures at the top gives the mean temperature in degrees and hundredths for each of the ten days, the row below giving the rain-fall in inches and hundredths. The rain-fall for the last division of each month that contains other than thirty days has been reduced to the ten-day mean for the sake of comparison. Both of these curves are the normals obtained from the College records for the past thirty-six years.

The temperature curve is quite regular, being the lowest in the second decade of January, with a mean of 23.19°, and the highest the second decade of July, when the mean reached 78.70°. There is a cold spell the first decade of February made somewhat more prominent by warm periods the last of January and the middle of February.

In general it may be said that the rain-fall varies with the temperature. This is shown in the general outline of the two curves. The irregularities in the rain-fall curve seem to be accidental, such as would be obtained from a single year; when, however, it is remembered that this curve is the mean of thirty-six



years, it will be seen that these irregularities are quite certain to occur. Assuming that the rain-fall should follow the temperature, three serious dry periods of more or less extent may be noted, the first beginning with the twenty-first of February and continuing to the twentieth of March. This is the period so trying to winter wheat, and much of the "winter-killed" wheat can be traced to this lack of rain-fall, rather than to extremes of temperature. The next threatening dry period is the first decade of July. This is a short period, and the previous wet period makes it less noticeable. This period is accompanied by a rapidly rising temperature to almost the maximum, and frequently by hot winds. This may result in so much injury to growing corn that the following wet period cannot overcome it.

The most serious dry period, on account of its duration, runs through August, September, and the first ten days in October. It is this period that is especially trying to corn, late potatoes, and fall fruits. Two and one-quarter inches of rain-fall during this period would bring the rain-fall curve up to the temperature curve. Probably one inch of rain properly distributed would carry crops safely over this period. This suggests the good that might be done with a small amount of water applied at the right time.

The wet period in the middle of May frequently prevents the proper cultivation of crops, especially if continued to the end of June. The advantage that might naturally be expected from our wet years is often lost by this season becoming too wet and cold, the cold being indicated by a slight depression of the temperature curve. It is not claimed that any or all of these periods are present each year. Noted examples in recent years of injury to winter wheat by the spring drought are '79, '80, '81, '85, and '87. Great injury to corn resulted from the July drought of '81, '87, '90, and '93. The tendency to form the dry periods mentioned is clearly seen in 1882, but a cool July and August, with a warm spring and fall, gave the unusually large crops of that year on two inches less rain-fall than normal.

It may be objected that the relative position of these curves is arbitrary, and therefore useless for comparison. It is true there is no law that establishes the degrees of temperature that shall be equivalent to an inch of rain-fall. It will be admitted, I think, that thirty inches of rain-fall annually (our normal) is sufficient to make good crops in any portion of Kansas if properly distributed. The distribution selected would undoubtedly be that corresponding to the temperature. The character of these curves is not changed by their position. Sixty-six degrees instead of fifty-six degrees might have been assumed equivalent to an inch of rain-fall. This would make it appear that the rain-fall was sufficient in August and September and excessive in most of the other months, a condition few would admit. A variation of three, five, or any other number of degrees might have been taken as equivalent to a variation of one-tenth of an inch of rain-fall. The selection of four, however, seems to best bring out the facts with which every person is more or less familiar.

CHEMICAL NOTES ON POPULAR TOPICS. II.

BY PROF. J. T. WILLARD.

SUGAR is a subject of perennial interest to every one, from the adjuster of a tariff schedule to the humblest citizen of the Republic. The writer has frequently heard it maintained that old-fashioned brown sugar was sweeter than the refined article, but has been inclined to attribute the opinion to a delusion; the fine moist crystals of the brown sugar will dissolve quicker than the larger dry crystals of refined sugar, and so a greater effect would be produced upon the gustatory nerves within a limited time. Recent experiments, however, indicate that this cannot be the whole explanation, if any part of it. It has been found that the addition of common salt to a solution of pure sugar increases the sweetness of its taste. A twelve per cent solution to which one-hundredth of one per cent of common salt has been added tastes as sweet as a fifteen per cent solution to which no addition is made. Raw sugars contain various salts extracted with the sugar from the cane, and it is highly probable that their presence actually adds to the sweetening power of the sugar. It is the practice of makers of glucose syrup to add a small amount of common salt to their syrup. This gives a flavor more like molasses, and the facts just mentioned indicate that it serves the additional purpose of adding to its sweetness. Persons accustomed to provide syrup for the table by dissolving sugar in water will find it an improvement to add a small amount of salt. It may be mentioned, too, in this connection that at ordinary temperatures two pounds of sugar will dissolve in a pound of water.

The vexed question of use or non-use of stimulants and narcotics will probably never be set at rest. We all see the sins of other people much better than we see our own. The following results of experiments in artificial digestion as affected by tea and coffee are worthy of the attention of all reformers, and especially by those whose reforming should begin at home: Boiled egg chopped fine was digested by an artificial gastric juice to the extent of 94.3 per cent in eight hours. If about one-third ounce of water was added to the solution, 92.3 per cent was digested. If one-third ounce of tea infusion was added, only 66.7 per cent was digested, while with the same quantity of coffee infusion, only 61.3 per cent was digested, the time and other conditions being the same in all cases. It is evident that these beverages greatly depress digestion, dilution by water alone having but little effect.

The purification of sewage by electrolysis is receiving considerable attention of late. In some experiments, on a large scale, electrolyzed sea-water was mixed with the effluent from a sewer and was found to be highly efficient. By the action of the electric current upon the salt in the sea-water, sodium hypochlorite is produced, which is the disinfecting agent. A solution of salt in water, one to fifty, has been used instead of sea-water. Compared with other disinfect-

ants, this solution is far cheaper. The sea-water can be treated at an expense of one-hundredth of a cent per gallon. Bleaching powder solution of equal efficiency would cost one hundred and forty times as much; corrosive sublimate, one hundred times as much; and carbolic acid, two or three hundred times as much. The purification of contaminated water by the direct action of an electric current is doubtless due to the production of sodium hypochlorite from the salt always accompanying sewage, and not to any specific effect of the electricity upon the organisms.

The disinfection of rooms can be cheaply and thoroughly accomplished by exposing them to the action of strong ammonia fumes for eight or ten hours. For an ordinary room, about two pounds of concentrated aqua ammonia should be evaporated from a flat vessel. Some means of heating would be necessary, and it would seem that the gas might be boiled off from a flask in another room and conveyed by means of rubber tubing to the room to be treated.

WIND-MILL NOTES.

BY PROF. O. P. HOOD.

WHEN the steam engine became an important factor in the growth of manufacturing communities, its scientific development became a matter of concern. There soon began the most careful series of experiments as to the performance and efficiency of these engines under the most varied conditions of service and design, and this effort to improve along scientific lines has been richly rewarded. These experiments are still going on in numberless colleges and private experimental laboratories and scientific departments of great corporations, and we have today a large literature detailing these scientific investigations. In most of the colleges where engineering is taught, the study of this motor of prime importance to our civilization forms a strong part of the course.

It seems natural that with the growth of the irrigation idea the wind-mill will form a most important factor in the life of a large community, and the same spirit of scientific investigation should be turned towards this motor as has been so lavishly bestowed upon the steam engine. I have no doubt that when this is done, equally important results will be obtained. The first step in such an investigation would be a careful study of the action of the wind on a plane surface.

The recent attack by well-trained scientific inventors upon the flying machine problem has considerably increased our knowledge of the action of the wind upon these planes, and would undoubtedly have application to the wind-mill problem. It is a little remarkable, however, that, old as the wind mill is, and important as it has been and is destined to be, there is no body of experiments as to the actual power of mills which is obtainable.

The only fairly reliable data obtainable is from experiments made by Smeaton about 1755 and Coulomb about 1821. Neither of these were with mills similar to our American form, and neither of them considered all of the factors which influence the power of a mill.

A number of mathematical analysts have worked upon the problem of the mechanical effect of wind upon a wind-mill, and the formula developed by Mr. A. R. Wolf seems well supported by such authority as Weisbach, Rankine, Hawksley, Field, and others. The formula contains at least ten factors and at least eighteen terms, and is too long and complicated for an easily used tool.

It agrees very closely with actual experience, and reveals a number of interesting facts. The most noticeable factor is the rate of increase in the power of the mill as the velocity of wind increases. The power increase as the cube of the velocity. If the power of a mill is considered as unity at a wind velocity of eight miles per hour, its power in a ten-mile wind is nearly double, or, to be exact, as 512 is to 1000. At fifteen miles, the power is nearly six and a half times, and at twenty miles, over fifteen and a half times what the power would be in an eight-mile breeze. From this it is very evident that the power of any mill can be made to appear very large if a goodly breeze is taken as the standard of wind velocity. It is customary for manufacturers to consider the wind velocity as sixteen or twenty miles per hour, at which rating a mill is from four to eight times as powerful as it is in the average wind, which at this point is about ten miles per hour.

These figures, it is true, apply closely only to mills having their sails arranged at the proper angles for maximum effect. The sails, or blades, of a wind-mill should not be plane, but should be warped, making a much greater angle with the plane of rotation of the wheel at their inner ends than at the circumference. This angle of weather, as it is called, also depends on the ratio between the velocity of the wheel and the velocity of the wind.

To satisfy theoretical requirements for maximum efficiency, therefore, the circumferential speed of the wind-mill should always hold a certain fixed relation to the speed of the wind. If it could be devised so that the speed of the circumference of the wheel should go at the same speed as the wind, then the inner end of the blade should make an angle with the wheel of 41°, while the outer end made an angle of a little over 22½°. If, however, the wheel have a velocity of three and one-half times that of the wind, then the most efficient angle would be about 31½° for the inner end, and 8° for the outer end.

The development of the formula shows, then, that for maximum efficiency the blades should be twisted, and that the twist being given and fixed, the ratio of wheel speed to wind speed should be kept constant. This, so far, seems impossible of accomplishment, but offers a prominent field for investigation.

The effect of wind, at a given velocity, varies quite perceptibly with the temperature, and also with the height of the barometer. At a temperature of 32°, a ten-mile breeze will exert a pressure of one-half pound per square foot. The same rate of speed, however, with the temperature at 100° would give a pressure of but .441 pounds per square foot, or a decrease of 11.8 per cent.

The usual formula found in hand-books, and which is approximately correct, is that the horse power is equal to $\frac{Av3}{1,080,000}$ in which A is the area of the sails in square feet, and v is the velocity of the wind in feet per second.

The average run of wind each year at Manhattan is between 85,000 and 90,000 miles, and at an average velocity of ten miles each hour. The distribution of this wind over the year, and particularly over the summer months, forms an interesting study in connection with the available power of a wind-mill during a year. It is generally considered that a wind velocity of six miles per hour is necessary to run at a very slow speed a loaded mill, and that all breezes below this are lost. If, then, a large per cent of the run of wind at a given place is made up of light winds, below six miles, it would seem that a mill geared higher or of lighter construction would be an advantage. The proportion of brisk winds, as the real power-giving winds, it would also be interesting to know. The wind records from month to month at this place do not depart very materially from the means for those months, the wind being greatest in the spring, and below the average in the summer and early fall.

The following table shows the per cent of the total time in each month, from May, 1891, to May, 1892, during which the wind was blowing at a rate less than six miles per hour. While this year's record varies, of course, from other years, still investigation of the records for other years would show a similar percentage of useless wind as far as power purposes are concerned:—

TABLE I., SHOWING PER CENT OF USELESS WIND.

	1891.								1892.			
	May.	*June.*	*July.*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Jan.*	*Feb.*	*Mar.*	*April.*
Per ct. of time of mo. wind being below six miles per hour.	23.7	27.1	43 4	36.8	20	35.2	26	19.8	36 1	23.3	15.6	15.1
Per ct. of time of mo. wind being above thirty miles per hour.	1	....	....	...	.13	....	2.3	3.4	....	....	5.3	9.3
Total per ct. of useless wind.	24.7	27.1	43.4	36.8	20.1	35.2	28.3	23 2	36.1	23.3	20.9	24.4

Average per year, 28.6 per cent.

The maximum winds in which a wheel should be out of work are probably those above thirty miles per hour. These form a very small proportion of the time, but are included in the table.

The actual useful horsepower, as determined by a 10-foot wheel in a 16-mile wind, is very close to one-eighth of a horse power. If this be taken as a basis of comparison, the actual useful horse power at different rates of wind velocity is given approximately in the following table. To find what total useful effect could be expected in each month of the year investigated, Table III., giving the number of hours in each month during which the wind blew at each velocity from zero to its monthly maximum, can be combined with Table II., giving the results in Table IV. An inspection of Table IV. shows some interesting features. The distribution of the winds during any month is of quite as much importance as the total number of miles run as shown by comparing July and August, July having the greater horse power, but less miles of wind. April also having nearly the same mileage of wind as March, yet has considerable less horse power due to the distribution of the wind velocity.

TABLE II., HORSE POWER OF A TEN-FOOT MILL AT VARIOUS WIND VELOCITIES, BASED ON THE USUAL PERFORMANCE AT 16 MILES PER HOUR.

Miles.	*H.P.*	*Miles.*	*H.P.*	*Miles.*	*H.P.*
6	.0063	16	.12	26	.515
7	.01	17	.144	27	.576
8	.015	18	.17	28	.643
9	.021	19	.2	29	.711
10	.029	20	.234	30	.79
11	.039	21	.271	31	.872
12	.05	22	.311	32	.96
13	.064	23	.356	33	1.05
14	.08	24	.405	.....	.....
15	.099	25	.457	.....	.....

The table also shows that at the time when a wheel is most needed the power is much the lowest, averaging for the months of May, June, July, and August only about one-twentieth horse power for the full time, while the yearly average is about one-fourteenth horse power. While the total horse power seems very large, namely, 40,678 horse power as the year's work of the 10-foot mill, still when reduced to the actual rate of work, which is horse power in the proper sense, it agrees with what observation I have had. Dividing by 365 as the number of days, the horse power per day would be 111.4,

TABLE III., SHOWING HOURS OF WIND AT EACH VELOCITY FROM ZERO TO THE MONTHLY MAXIMUM DURING ONE YEAR, FROM MAY, 1891.

Velocity of wind in miles per hour.	*May.*	*June.*	*July.*	*August.*	*September.*	*October.*	*November.*	*December.*	*January.*	*February.*	*March.*	*April.*
0	38	16	40	25	16	23	27	16	25	2	17	13
1	30	29	45	27	12	23	29	19	44	16	21	16
2	30	35	57	44	14	46	25	19	51	20	17	13
3	27	45	55	60	23	57	22	25	51	27	24	22
4	30	33	78	63	39	53	47	36	52	46	11	23
5	22	37	49	56	40	61	37	33	47	51	27	22
6	36	53	63	63	53	63	48	30	58	49	27	26
7	44	35	45	57	39	45	38	31	45	43	27	46
8	40	44	55	54	39	37	37	26	40	46	35	31
9	44	46	44	56	48	42	44	40	19	39	24	22
10	41	39	38	40	44	36	36	36	39	45	21	26
11	47	33	24	50	46	30	24	41	30	53	33	33
12	44	42	30	37	42	24	33	38	27	37	41	37
13	34	32	19	27	42	24	32	30	39	31	35	29
14	42	42	14	15	32	19	28	22	35	39	28	32
15	35	30	13	17	37	18	36	25	31	31	26	31
16	37	35	14	16	26	21	27	24	16	30	29	14
17	23	19	12	7	29	21	24	21	18	30	27	26
18	20	19	10	9	17	11	17	22	12	26	27	28
19	15	11	6	7	16	10	15	19	15	6	35	18
20	14	15	4	1	11	11	13	29	11	11	20	18
21	2	14	9	2	17	16	10	24	8	4	20	13
22	3	5	....	3	19	10	11	19	9	1	17	21
23	3	2	3	4	8	11	7	25	7	2	10	11
24	5	2	5	....	7	9	10	11	2	2	22	16
25	4	....	3	1	3	6	4	14	5	1	19	17
26	8	4	3	2	4	4	5	11	3	1	12	7
27	2	2	4	....	2	2	6	15	....	1	14	22
28	2	....	....	1	1	5	5	3	....	3	17	9
29	....	1	2	....	1	3	3	5	1	1	10	6
30	4	....	....	....	....	3	3	9	....	2	11	5
31	....	....	....	....	1	....	4	7	....	....	3	7
32	4	....	....	....	....	....	3	4	....	....	7	5
33	1	....	....	....	....	....	4	2	....	....	5	5
34	....	....	....	....	....	....	2	2	....	....	2	2
35	2	....	....	....	....	....	3	3	....	....	12	4
36	1	....	....	....	....	....	1	1	....	....	3	4
37	....	....	....	....	....	....	....	2	....	....	2	4
38	....	....	....	....	....	....	....	1	....	....	3	5
39	....	....	....	....	....	....	....	....	....	....	1	3
40	....	....	....	....	....	....	....	1	....	....	....	1
41	....	....	....	....	....	....	....	....	....	....	....	3
42	....	....	....	....	....	....	....	1	....	....	1	2
43	....	....	....	....	....	....	....	1	....	....	....	3
44	....	....	....	....	....	....	....	....	....	....	1	3
45	....	....	....	....	....	....	....	....	....	....	....	6
46	....	....	....	....	....	....	....	....	....	....	....	3
47	....	....	....	....	....	....	....	....	....	....	....	3
48	....	....	....	....	....	....	....	1	....	....	....	3
49	....	....	....	....	....	....	....	....	....	....	....	1

or dividing further by 24 hours, it would be 4.64 horse power per hour, or at a rate of .0707 true horse power. It could be said, therefore, that a 10-foot mill gave during the year noted a constant rate of not quite one-fourteenth of a horse power. This would have been given if the wind had been constant for the year at a rate of a little less than fourteen miles per hour. Allowing for the useless wind, the wheel was at work about seventeen hours each day during the year, and its rate would be about one-tenth of a horse power for the actual running time, corresponding to a little over fifteen miles per hour, seventeen hours per day. Mr. Wolf considers that, taking the country over, sixteen miles an hour for eight hours is a fair estimate, from which it will be seen that Kansas has a longer wind-mill day than the average. Table V. shows at what rate the 10-foot mill should have been rated in each of the months noted. During July the mill would give about one-twenty-fifth horse power for the full time, or, if the number of hours during which it was actually running were counted, it would give during that time about one-twelfth horse power.

A gallon of water weighs 8.3 pounds, and if lifted 40 feet in one minute, would require 332 foot pounds of work, or about one-hundredth horse power. The mill in June, therefore, could have been counted on to

(Continued on page 132)

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Mrs. Breese returned on Monday from Elmdale.

Ellsworth and Ollie Voiles visited Chapel Friday afternoon.

Bess Leland, of Wamego, is visiting Dora Thompson, Third-year.

Miss Birdie King, of Topeka, is the guest of Olive Wilson, Third-year.

A report of the Ionian exhibition is crowded out. It will appear next week.

Rev. Mr. Richards, of Wabaunsee, led the chapel exercises Monday morning.

Mrs. Hacker and Miss Davis of the city attended morning exercises, Tuesday.

A number of students are members of the Juliette Avenue Tennis Club, just organized.

Irving Fryhofer, of Randolph, visited his brother and sister, George and Nora, yesterday.

Regent Secrest writes a touching obituary on James M. Harvey in this week's *Republic*.

Assistant Chemist Breese drives a new horse which he has just received from the home farm near Elmdale.

Mr. W. T. Eckles, of Eskridge, was shown through the College yesterday afternoon by a delegation of the Class of '93—Misses Edith McDowell and Laura Day.

Prof. Cowgill, of the *Kansas Farmer*, on Wednesday visited the scene of his labors several years ago. His is a familiar figure in College halls, and he is always welcome.

Regent C. B. Hoffman addressed the teachers of Dickinson County, at their March meeting, on "Parents in the School." The Abilene *School and Home* says: "The address was pointed and impressive."

Bulletin No. 45, from the Farm Department, gives experiments with corn as regards frequency of cultivation, effect of removing tassels, planting at different distances for grain and fodder, butt, middle, and tip kernels for seed, listing and surface planting, and variety tests. The bulletins are sent free to residents of the State who apply for them.

Prof. Georgeson has just returned from a week's stay in Colorado, where he went to study methods of using water for irrigation. He visited Fort Collins and Greeley. At the town first named he had a pleasant visit at the Colorado Agricultural College with D. W. Working, '88, the efficient Secretary of the College and the State Board of Agriculture. Prof. Georgeson will write of his observations in next week's INDUSTRIALIST.

President Fairchild occupied the public hour yesterday with a lecture on "Boyhood in the Good Old Times." We were carried back to the early days of Ohio, where the scene of the lecture was laid. The development of the people and surrounding country was traced from the speaker's birth to his majority. We were given a picture of his home and surroundings, the methods of farming, building, and the social relations at that time being reviewed. He told us how in those days every family was dependent upon themselves for their wearing apparel, farm implements, etc., and how this made it necessary for every boy to become acquainted with different occupations, such as carpenter, blacksmith, tailor, and shoemaker trade. He concluded by saying that he celebrated his majority by engaging to teach a country school of fifty pupils at twenty-five dollars a month.

Friday evening, April 20th, the members of the Fourth-year Class added another gem to their list of social events. Backward glimpses in memory's pages cannot recall a more thoroughly enjoyable party than that in which the Class of '94 participated at the residence of Mr. and Mrs. R. H. Kimball, through the invitation of their daughter, Stella, a member of the Class. About half-past eight o'clock, that evening, might have been seen three or four hack loads of jolly Seniors wending their way through the evergreens of Cedarville toward the light streaming from the windows of their classmate's home. The genuine hospitality of the hostess, aided by class acquaintanceship and familiarity, presented only a trace of formality, and hats, cloaks, fascinators, had hardly been removed ere all were busily engaged in a good time. Games and a variety of amusements so absorbed the minds of all that it seemed but a very short time till the gentlemen were called to "fish for company to supper." This they did with a right good will, and soon all were enjoying an elegant repast, and for a time the hum of voices was practically hushed. A vocal solo by Miss Jennie Smith, and one by Miss Rena Helder, closed the evening's entertainment, and at a very late hour—we dare not say how late—the guests bade their hostess good night, with the unanimous verdict that she ranked among the first as a model entertainer.

We have received and carefully read Prof. C. C. Georgeson's report of the Dairy Industry of Denmark. It is one of the best books on that subject I have ever read, and shows that the Professor spent time and pains in its preparation. Every farmer interested in this particular industry should have a copy. Send and get one. They are for distribution. —*T. B. Miller, in Manhattan Republic.* The reports are for distribution by the Department of Agriculture at Washington, not by Prof. Georgeson, as might be inferred by the above notice.

GRADUATES AND FORMER STUDENTS.

Anna Snyder, '88, is visiting her brother in College.

G. K. Thompson, '93, came down from Irving to attend the Annual.

D. C. McDowell, '91, is again with the E. B. Purcell Mercantile Company.

Maggie Correll, student last term, is visiting Minnie Pincomb at the College.

Callie Conwell, '91, visited College Tuesday with Nora Fryhofer, Third-year.

Everett Higinbotham, of Myers Valley, came up to attend the Ionian Annual.

Mrs. Kate Oldham-Sisson, '92, is at College to complete her post-graduate course.

Eusebia Mudge, '93, testified to her love for the Ionians by her presence at the exhibition.

Grant Selby attended chapel exercises Thursday morning with his sister Mabel, in Third-year classes.

Mary Kokanour-Miles, Fourth-year in 1886-7, is the mother of a daughter born at Clay Center, March 23rd.

Delpha Hoop, '91, since closing a successful school on Fancy Creek, makes frequent visits to her Alma Mater.

T. W. Morse, Third-year in 1892-3, came up from St. Mary's to attend the Annual, and visit College friends.

Emma Pike, a former student, visited Ollie Voiles the last of the week before returning to her work in Topeka.

S. N. Chaffee, '91, made a brief visit at the College yesterday. He is at home on the farm after a year of teaching.

J. L. McDowell, '92, visited College yesterday. He is studying medicine and surgery under Dr. Lyman in Manhattan.

Winifred Houghton, student last year, has just completed a successful term of teaching, and reenters College this week.

Eben and Will Blachley, Second-years in 1891-2, were down to attend the Annual. Will expects to be in College again next year.

H. A. Darnell, '92, was in the city the first of the week and visited College Monday and Tuesday. He has just closed his school at Pavillion.

J. E. Thackrey, '93, is visiting the home folks for a few days, and availed himself of the opportunity thereby given to attend chapel exercise Wednesday morning.

The class of '92 was well represented in chapel Tuesday morning, the following members attending in a body, as it were: Grace Clark, H. A. Darnell, J. W. Hartley, Kate Oldham-Sisson, and F. C. Sears. Later in the morning they held a class meeting.

Notes From the Farm.

With a view to getting a stand of clover in the spring's grass seeding where it was all killed out by the March freeze, twenty pounds of clover seed to the acre has just been broad-casted and harrowed in. This is done at a sacrifice of some of the grass, but the injury is slight, as the harrow was very light, with slanting teeth, and the grass had been drilled in and already had a growth of a couple of inches and a thick stand. The benefit derived from the addition of the clover will more than balance the injury done the grass. All that is wanted now to make the experiment a success is a rain to start the clover, as the ground is very dry on top. A small patch was drilled in; this covered the seed better and did not kill any more of the grass than the harrowing.

Three acres of Mammoth Russian sunflowers will make a flower bed on the Farm this summer. They are planted and cultivated as we do corn. The crop is already in and has had one cultivation. Sunflowers are extensively raised for stock food in some places, and a valuable oil is obtained from the seed.

Mr. F. G. White of Victoria, Kansas, sends a sample of three varieties of corn from Peru. The kernels are four or five times as large as ordinary corn.

Four lambs is the sheep increase this spring. This makes a fine Shropshire flock of thirteen.

The College Jerseys seem to realize that there has been a rise in value of their kind, and have presented three fine heifer calves and one bull calf this spring. Old Craven Knight will be remembered this year by the arrival of six bull and three heifer calves.

An experiment has been started this spring to see the effect of the different times of planting corn. The first planting was April 19th, and will continue on every seventh day until May 31st.

Myriads of adult chinch bugs are harboring in the wheat at present. The wheat is not thrifty enough to stand a very severe attack of these insects this spring. If the weather remains dry, there will be a great deal of damage done by the coming brood.

F. C. BURTIS.

Shop Notes.

The sash weights to be used in the new Library building are being made at the College foundry. About three tons will be required, of which about two and one-fourth tons are now made. They range from four and one-half pounds to twelve and one-half pounds each. The opening through which the cord will pass is made by casting them around a curved, tapered "chill." This is done that the knot at the end of the cord shall be enclosed within the weight, and that both shall hang in line after being put in place.

The blachsmithing classes are learning to make tongs, clevises, links, hooks, etc. These articles are everyday needs, and the farmer should know how to make them. The aim of instruction in this work is to give practical ideas and knowledge that may be applied in everyday life. The man who can make a good clevis or mend a chain in a few minutes with his own tools and in his own shop at home is far ahead of the man who must go five miles and pay a blacksmith to do it for him. With the instruction given here, we believe that the students in this department will be the men who are ahead.

Our boys recognize the use of the forge on the farm, and some are building forges for use at home. They are of good capacity for all ordinary work, and will raise a two and one-half inch piece to welding heat in five minutes. The pan is of cast-iron, twenty inches wide, thirty-six inches long, by three inches deep, with the blower attached to the under side directly below the tuyere iron. It is furnished with a fan seven and three-eighth inches in diameter. The whole is supported on four legs of one-inch gas-pipe screwed into the under side of the pan. These are connected by rods which give rigidity to the whole. Although not expensive, they are of excellent design, and will well pay for the time and material used in their construction.

C. R. HUTCHINGS.

Shoe Business For Sale.

I will sell for cash my stock of shoes and fixtures. Stock in good shape. Trade good and well established. Best location in the city. This is a splendid business opportunity, and at the same time one can enjoy the College and school advantages of Manhattan. Address, Leslie H. Smith, Manhattan, Kansas.

COLLEGE ORGANIZATIONS.

Student Editors.—E. L. Frowe, Isabella R. Frisbie, and Phœbe Turner.

Webster Society.—President, John Stingley; Vice-President, H. G. Pope; Recording Secretary, E. H. Webster; Corresponding Secretary; E. R. Farwell; Treasurer, J. W. Finley; Critic, G. C. Wheeler; Marshal, T. M. Robertson; Board of Directors, I. A. Robertson, J. W. Evans, J. B. Harman, J. B. Dorman, and M. Wheeler. Meets Saturday evening at 8:00 o'clock. Admits to membership gentlemen only.

Ionian Society.—President, Isabella Frisbie; Vice-President, Rena Helder; Recording Secretary, Martha Harbord; Corresponding Secretary, Miriam Swingle; Treasurer. Louise Spohr; Critic, Kate Pierce; Marshal, Gertie Lyman; Board of Directors, Ethel Patten, Maud E. Kennett, Florence Corbett, Mabel Selby, and Louise Spohr. Meets Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Hamilton Society.—President, John A. Scheel; Vice-President, R. J. Barnett; Recording Secretary, J. J. Johnson; Corresponding Secretary, F. A. Dawley; Treasurer, H. G. Johnson; Critic, W. O. Staver; Marshal, O. Strahl; Board of Directors, E. L. Frowe, R. S. Kellogg, C. A. Johnson, J. W. Holland, and C. E. Pincomb. Meets Saturday evening at 8:00 o'clock. Admits to membership gentlemen only.

Alpha Beta.—President, Stella V. Kimball; Vice-President, W. H. Phipps; Recording Secretary, J. E. Taylor; Corresponding Secretary, Lucy Waters; Treasurer, O. H. Halstead; Critic, Sadie Moore; Marshal, Inez Manchester; Board of Directors, W. H. Phipps, J. B. S. Norton, J. C. Christensen, Fannie Parkinson, G. L. Christensen, Stella Kimball, C. C. Smith. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

April 20th.

President Frisbie called the Ionians to order shortly after chapel exercise. The Society joined in singing a hymn, after which Ellen Norton led in devotion. At roll-call a goodly number responded. Vice-President Helder was installed. The program opened with the reading of the Oracle by Sue Long. Her motto was, "No tributes laid on castles in the air." It was a good edition and was well read, thus doing credit to the editor. Misses Vandivert and Hacker rendered a pleasing piano duet. One of Marion Crawford's late books, Saricinsca, was reviewed by Miriam Swingle. Kate Pierce's vocal solo, "Love's Golden Dream," was appreciated, as was shown by the hearty encore she received, to which she responded. Debate and declamations had to be omitted on account of business.

M. E. S.

April 21st.

The Hamilton Society was called to order at the usual time by Pres. Scheel. After roll-call which showed several members to be absent on account of the measles, C. D. Adams led in devotion. The program of the evening was opened by a very amusing essay written by Guy Whitson. His subject was "My First Botany Trip." E. L. Smith recited a very instructive declamation entitled "Acomplishments of Good Reading." The debate upon the question "Resolved, that Literature has contributed more to civilization than Science," was argued affirmatively by E. Emrick and O. Bentz. They showed that literature and civilization had gone hand in hand. Also, stated that it was the literary men and thinkers that laid the foundation of our Government and were at the head of it today. Messrs. Snyder and Trumbull in arguing the negative cited us to the fact that a

great many of our literary men were also scientists. They also claimed that it is to the scientist alone that we are indebted for our many modern improvements and inventions. The Society acting as judges decided in favor of the affirmative. G. G. Boardman's discussion upon "Three Important Improvements" brought out the need of more thorough training in reading, writing, and spelling. V. Emrick in his oration compared the farmer of one hundred years ago with the farmer of to-day, and brought out the great advantage the modern farmer had over his forefathers. G. B. Norris in his select reading entitled "The Interview," showed that he had had a good training in this line. After recess an interesting edition of the Recorder was presented by C. R. Hutchings. The following are some of the principal articles: "The Election," a poem, "The Dreamer," "Our Singing Class," "Address to a Young Man on His Twenty-first Birthday." This closed the progam, and there being nothing of importance under unfinished and new business the Society immediately entered into extemporaneous speaking. The question as to what room in the new building the Society would prefer was discussed; and from appearances they were pretty well divided. Report of Critic. F. A. D.

April 21st.

The Websters were called to order at eight o'clock by President Stingley. After roll-call, B. F. S. Royer led in prayer. The minutes of previous meeting were read and approved. Under inauguration of officers, the Board of Directors were installed. Byron Kirkpatrick and A. G. Farley were elected to membership and also initiated. "Resolved, that the Nicaragua Canal should be completed by the United States," was the question for debate. H. J. Robison opened the affirmative by giving the position of this canal, and the amount of work it would take to complete it. He said it would give this vast army now on the march to Washington something to do. The cost to the Government, he said, would be very small compared with the good that we should obtain. M. Wheeler said in defense that the people which began this canal had spent over $5,000,000 already, and for the United States to step in and finish it would bring on trouble. He said that the money in the United States Treasury was low, and we could not afford the cost. Also that it was so far south it would be impossible for men to live very long in such a climate. In continuing the affirmative, W. J. Rhoades spoke of the great benefit the Suez Canal had been to England, and said that the Nicaragua Canal would be of far greater benefit to the United States. A. B. Symns, in speaking further on the negative, said that the only way we could get hold of this Canal would be to buy it, and that would be an expense; then, also, that the distance yet to be traversed was the most difficult part, and could not be done without a great expenditure of time and money. Mr. Robison summed up the affirmative by saying that never in the history of our country were there so many men in want of work and that they would work cheap, and we ought to finish the Canal to give them work, and that the investment would pay for itself. Mr. Wheeler in concluding said that the United States had better wait until the Canal was completed, then buy an interest if it sees fit. The negative won the question. F. E. Uhl next gave us a declamation, "Unjust National Acquisition," which was well handled, and the Society showed their appreciation by the hearty applause that followed. Sid Creager gave us a speech on "The Movement of the Unemployed," which was quite interesting. Recess followed, after which Mark Kirkpatrick read an essay on "Coxey's Army," which showed that he had given the subject careful study. Music by the Webster Trio. The Webster Reporter was then read by D. C. Arnold. B. R. Hull gave us a discussion on "Sewing Machines." Critic's report. The business of the Society was next taken up.

E. R. F.

April 20th.

President Kimball called the Alpha Betas to order at the usual time. Miss Hacker favored the Society with an organ solo, after which Mr. Clothier led in prayer. We then considered our lecturer for commencement week, the decision of Society being almost unanimous for Bishop Vincent. We next listened to a declamation by Florence Martin, followed by a declamation by Mary Painter. Both were delivered in an interesting manner. An excellent essay by Kitty Smith entertained us for about five minutes and gave us an unusually large amount of instruction. The debate was on the proposed amendment to our State constitution giving the right of suffrage to Kansas women. The question is old, but it is one which will be discussed in civilized society until finally settled by the people. Sadie Moore and Gertrude Havens brought to our minds many reasons why women should have the right of suffrage, among other points claiming that women are intellectuallyand morally better qualified to exercise this right than men. E. J. Hartzler and W. E. Thackrey cited facts to show that suffrage where it has been tried has not always been a moral advantage. They pointed also to the fact that all women do not want to vote and would not avail themselves of the opportunity to purify the ballot box. Mr. Powell edited and read No. 23, Vol. XIX., of the Gleaner, assisted by the third division. After recess we indulged in a more than usually interesting twenty minutes of extemporaneous speaking. The usual business took up the last part of the session. The most interesting part of the business was the report of the lecture committee, saying that Bishop Vincent had been procured to deliver the Annual Address before the Societies. C. C. S.

TABLE IV., SHOWING H. P. OBTAINED FROM A TEN-FOOT MILL (ON THE BASIS OF THE OBSERVED PERFORMANCE AT SIXTEEN MILES PER HOUR) AT EACH VELOCITY AND FOR NUMBER OF HOURS GIVEN IN TABLE. III.

Velocity of wind in miles per hour.	*May.*	*June.*	*July.*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Jan*	*Feb.*	*Mar.*	*April*
6	13.5	20	23.8	20.8	20	23.8	18.1	11.3	21.9	18.5	10.2	9.8
7	26.4	21	27	34.2	23.4	27	22.8	18.6	27	25.8	16.2	27.6
8	36	39.6	49.5	48.6	35.1	33.3	33.3	23 4	36	41.4	31.5	27.9
9	55	57.5	55	70	60	52.5	55	50	24	48.7	30	27.5
10	71.3	67.8	66.1	69.6	76.5	62.6	62.6	62.6	67.8	78.3	36.5	45.2
11	109.9	77.2	56.1	117	107.6	70.2	56.1	95.9	70.2	124	77.2	77.2
12	132	126	90	111	126	72	99	114	81	111	123	111
13	130.5	122.8	72.9	96	161.2	92	122.8	115.2	149.7	119	134.4	111.3
14	201.6	201.6	67.2	72	153.6	91.2	134.4	105.6	108	187 2	134.4	153.6
15	207.9	178.2	77.2	100.9	219.7	100.9	213.8	148 5	184.1	184.1	154.4	184.1
16	266.4	252	100 8	115.2	187.2	151.2	194.4	172.8	115.2	216	208 8	100.8
17	198.7	164.1	103.6	60.4	250.5	181.4	207.3	181.4	155.5	259.2	233.2	224.6
18	204	193.8	102	91 8	173.4	112.2	173.4	224.4	122.4	265.2	275.4	285.6
19	170	132	72	84	192	120	170	218	170	72	420	216
20	196.5	210.6	56.1	14	154.4	154.4	182.5	407.1	154.4	154	280.8	252.7
21	32.5	227.6	146.3	32.5	276.4	260.1	162.6	390.2	112.3	65	325.2	211.3
22	55.9	93.3	.....	55.9	354.5	186.6	205.2	354.5	167.9	18.6	317.2	291.8
23	64	42.6	64	85.4	170.8	234.9	149.5	634	149.5	42.6	213.6	234.9
24	121.5	48.6	121.5	.....	170.1	218.7	243	267.3	48.6	48.6	534.6	388.8
25	109.6	.....	82.2	27.4	82.2	164.5	109.6	383.8	137.1	27.4	520.9	466.1
26	247.2	123.6	92.7	61.8	123.6	123.6	154 5	339.9	92.7	30.9	370.8	216.3
27	69.1	69.1	138.2	.....	69.1	69.1	207.3	518.4	.....	34.5	497.8	760.3
28	77.1	.....	.....	38.5	38.5	192.9	192.9	115.7	.....	115.7	655.8	347.2
29	.....	42.6	85.3	.....	42.6	127.9	127.9	213.3	42.6	42.6	426	255.9
30	189.6	.....	.....	.....	.....	142.2	142.2	426.6	.....	94.8	521.4	237
Total H. P.	2986.2	2511.6	1861.3	1410	3268.4	3071.2	3440.2	5592.5	2298.3	2425.1	6549.3	5264.5
Total miles of wind	7691	7010	5551	5734	7791	6919	7938	10030	6517	7029	11133	11196

WIND-MILL NOTES.

(Continued from page 130.)

have lifted from a 40-foot well about 5.8 gallons per minute through the month, or 8352 gallons per day.

It may be well to state that a true horse power is the equivalent of raising 33,000 pounds one foot high in one minute. In computing the horse power for a month or year, the time was not considered; the figures represent the quantity of work, therefore, rather than the rate of doing work.

TABLE V., SHOWING RATED HORSE POWER OF TEN-FOOT MILL IN EACH MONTH.

	May.	*June.*	*July.*	*Aug*	*Sept.*	*Oct.*	
Average rate for 24 hours per day, horse power	.0669	.0581	.0418	.0316	.0756	.0688	
Average rate during actual hours of running, horse power	.0888	.079	.0817	.05	.0945	.106	

	Nov.	*Dec.*	*Jan.*	*Feb.*	*Mar.*	*April.*	*Year.*
Average rate for 24 hours per day, horse power	.0796	.125	.0514	.058	.146	.121	.0714
Average rate during actual hours of running, horse power	.111	.163	.0806	.0757	.185	.161	.108

KANSAS EDUCATIONAL NOTES.

BY PROF. J. D. WALTERS.

Baker University boasts of a bran new banjo club.

The Indian School at Lawrence has been officially designated as Haskell Institute.

Twelve pupils—seven boys and five girls—will graduate from the Abilene High School.

Lightning struck the Smith Center school house on Wednesday of last week while the school was in session. All were scared, though nobody was hurt.

All children under eight years of age will be excluded from the public schools in Kansas City, Kansas, next year because of insufficient accomodations.

The proposition to vote $100,000 worth of bonds for the building of a new school house which was voted on in Kansas City, Kan., was carried by a trifle more than 1,000 majority.

The Ottawa University Guards have received eighty stands of arms with equipments. The guns are loaned to the company by the Kansas State Military Department under a bond of $2,500. Robert Atkison, a graduate of Lexington, Mo., Military School, has been appointed Professor of Military Science.

Ft. Scott is to have a free public library. The library received 666 votes and 201 were cast against it; leaving 259 ballots which failed to make any expression on the library question and consequently were counted against it. This would make a total unfavorable vote of 460, and leave an absolute majority of 202 in favor of the library.

The place of meeting of the Kansas Academy of Language and Literature for 1895 is Emporia. The officers selected are: Prof. Arthur G. Canfield, Lawrence, President; Mrs. Mary Humphreys, Junction City, Vice-President; Miss Florence L. Snow, Neosho Falls, Secretary; Mr. B. W. Woodward. Lawrence, Treasurer; Acting-President Hewett, College of Emporia, Chairman of Executive Committee, associated with Mr. T. E. Dewey of Abilene, and Miss Carrie M. Watson, of Lawrence.

A Hutchinson special says: "The success of this year's musical jubilee, held in Hutchinson, has led to the organization of a State Musical Association. The jubilee to be held in Hutchinson on May 8, 9, 10, and 11, promises to surpass the jubilee of last year. The amount of cash to be given in premiums this year is greater than last year by seven hundred dollars, there being twenty-one prizes guaranteed by a fund of $3,000 subscribed by the Commercial Club of Hutchinson. The first, second, and third prizes of $500, $250 and $150, are for the best choruses of fifty or more mixed voices. The jubilee will be directed and instructed by Professor Archer, of Chicago, who will also judge the contests, and will each morning of the jubilee give drills, instructions, and lectures, programs of which will be published before the jubilee meets."

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THE INDUSTRIALIST.

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All payments of principal and interest on account of bon land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

A MATHEMATICAL CORNER.

BY ARNOLD EMCH.

THERE is a small district in northern Switzerland, which has frequently been called the cradle of high[illegible]matics. The designation is, of course, an overstatemen[illegible]rt, a radius of scarcely thirty-five [illegible] the small city of Olten as its center, includes the birth-places of Euler, the great mathematician of the eighteenth century; of the five Bernoullys, whose investigations in the fields of mechanics, optics, and pure mathematics are mentioned in every history of science; of Steiner, whom the Encyclopedia Brittanica calls the greatest geometrician of all ages; of Hassler, the organizer of the Geodetic Survey of the United States; of Wolf, the astronomer and discoverer of the correlation of the sun spots with the magnetic variations of the earth; and of Schläfli, the discoverer of a series of analytical functions. It has also been the home of Möllinger, the father of axonometric projection; of Culmann, to whom the world owes the first book on Graphic Statics; and of Fieder, whose numerous works on projective geometry are quoted as authorities in all countries.

It will be of interest to note that the factories of mathematical instruments, which easily hold the first place in the scientific laboratories of the world, are also located within this district; that Pestalozzi wrote his "Lienhard and Gertrud," and Rousseau, his "Emile," here, two educational books which have contributed greatly toward the development of mathematical teaching in the common schools.

The student who is interested in the history of mathematics will find biographies of Euler and Steiner in every cyclopedia, while the other names with the exception of Möllinger, Schäfli, and Fiedler are mentioned in "The Teaching and History of Mathematics in the United States," by Florian Cajori. The book (400 pp.) forms circular No. 3, of 1890, of the Bureau of Education of the United States, and may be obtained free of charge at that office. Schläfli was Professor of Higher Mathematics at the University of Bern, and Möllinger held the same chair at the Cantonal College at Solothurn (the teacher of Prof. Walters at this College). While there Möllinger published a number of works on axonometry and astronomy. In 1868 he wrote a stirring pamphlet on "Die Gottes Idee der Neuzeit," which forced him to resign the position held for twenty years. He removed to Zürich, and opened a private school of higher mathematics, which at his death a few years later numbered over 200 students, though the city is the seat of a university and a polytechnic school. Fiedler is the geometrician of the school of pure mathematics at the Federal Polytechnic Institute at Zurich, and is the father of a new branch of projective geometry, cyclography, which, although a new science, has already been wonderfully productive in furnishing valuable generalizations and abstractions.

The most interesting for the American student of these men is undoubtedly Ferdinand R. Hassler. A biography of him may be found on pages 286-293 of the afore-mentioned circular. Hassler was born in the town of Aarau in 1770. He attended the University of Bern to study law, but soon drifted into mathematics and became a favorite pupil of Prof. John Tralles. Tralles and Hassler undertook the topographical survey of the Canton of Bern, and this work was the training school which fitted him to undertake such a difficult task as the U. S. Coast and Geodetic Survey was. The Swiss survey was commenced in 1791, but had to be discontinued in 1798 upon the invasion of the country by the French army. There being no chance for resuming the work at an early date, Hassler came to America, landing at Philadelphia in October, 1805. About this time Congress was considering the feasibility of the survey of the c[illegible]st and harbors, and Hassler was directed to undertake the work. As there were no instruments in the country, Hassler was made Professor of Mathematics at West Point, and the instruments ordered from Europe. In 1811 Hassler was sent to England to direct the manufacture of suitable instruments. Shortly after his arrival in Great Britain, the war of 1812 broke out, and [illegible] was four years in London in a very disagreeable position, partly left without compensation. In 1814 he returned with a set of instruments, which had cost nearly $40,000. The survey was commenced in 1816. In 1818 he lost his position as chief for political reasons, but in 1832 he was re-instated, and the work continued under his direction until the time of his death in 1843. Of the character of the man the aforesaid history says: "Mr. Hassler was very self-confident and independent. This was one cause of the occasional opposition to him. Though not conceited, he was conscious of his superiority over the great mass of men with whom he came in contact. At one time the cry of 'retrenchment and reform' had become popular, and a newly appointed Secretary of the Treasury thought he could not signalize his administration more aptly than by reducing the large salary of the Superintendent. He sent for Mr. Hassler and said, 'My dear sir, your salary is enormous; you receive $6,000 per annum—an income, do you know, quite as large as that of the Secretary of State.' 'True,' replied Hassler, 'precisely as much as the Secretary of State, and quite as much as the Chief of the Treasury; but do you know, Mr. Secretary, that the President can make a Minister of State of anybody; he can make one even of you, sir; but if he can make a Hassler, I will resign my place.' "

A comparison of these mathematicians shows a surprising similarity of characteristics. They were the children of a mountainous country, and were unable to grind off their edges in the contact with more refined society. Steiner, who, like Wolf, was a member of the Legion of Honor of France, and had been Professor of Mathematics at the University of Berlin for over a quarter of a century, spent his old age as a peasant at Utzenstorf, near the birthplace of the writer of this article. No one could have told him from the common people of the village, and like these he maintained his eyesight until the time of his death, so that at the age of over sixty years he could count a herd of cattle on a mountain meadow over ten miles away.

The question may be asked, how such a small district could have furnished this galaxy of men. The answer must be that while all conditions are favorable to produce strong men and active thinkers, the country lacks the raw materials which produce great industries, and the means of communication that foster commercial enterprises. As a result the student selects pedagogy, literature, art, or science for his life work. The many great thinkers given the world by the lonely hills of Scotland corroborate such a theory.

THE DEADLY CIGARETTE.

BY ALICE RUPP.

IT is a great question in the minds of many persons of the present day whether the boys—the "Young Americas," as it were—are not leading lives that will totally unfit them to assume the duties and responsibilities of manhood; services pertaining to citizenship as well as the important obligations of state and government.

On the streets of our villages and cities may be seen boys with a quid of tobacco in the mouth, a cigar or pipe?—no, they are relics of by-gone days and entirely too fogy for the fast young man—but a vile cigarette between the teeth, and the oft heard oath upon the lips. These boys, and their name is legion, are the disgrace of their towns, the sad and solemn reproaches of themselves, and the worst trials here on earth to their parents.

These boys are not from a particular class, as one might suppose, but file from the ranks of humanity in general, marking all stages or castes from the son of the prominent lawyer, merchant, or the minister, who is surrounded with wealth and the love of kind and sometimes over-indulgent parents, to the little happy-go-lucky street Arab with a care-for-nothingness in his manner.

He has no home, watched over by no patient, loving mother ever anxious to know where her son is and the character and influence of his companions; so this poor waif is content to wander aimlessly about the streets during the day, begging or perchance stealing his meager meals, picking up and enjoying the cast-a-ways ("stubs," or "snipes," as they are known in his vocabulary) of his more generous friend, the boy of means. At night he seeks the shelter of some dry goods box, protected from the storm and cold by a blanket of heaven s own blue, and guarded by her twinkling stars. We pity and can forgive the bad habits of these boys who have had no home influences, or, what is even worse than none at all, the influence of dissolute and debauched parents.

But what of the other boys? Life is made up of little things. The author who writes a book must do it word by word. The scientist who masters his sub-

ject must do it fact by fact and principle by principle. So it is with boys: they do not plunge headlong from purity and morality into the maelstrom of vice and immorality, but approach cautiously and step by step.

A little example will show how very young in life boys form the habit of smoking cigarettes. One evening in early spring as I sat at my window in a western city, breathing the fresh air and enjoying the of green, my attention was attracted by two little boys under a great and noble oak close by. One was about seven years old, while the other was still clad in his baby suit of kilts. The elder held in his hand a lighted cigarette and was trying all manner of suasion to induce the younger to take the dainty (?) tid-bit between his lips. Failing in this, he persuaded baby to open his mouth and allow the smoke to be blown into it from the mouth of the elder. Not desiring to see baby further imposed on, I went to his rescue. The elder, a bright, manly little fellow, parted with the coveted weed without reluctance, acknowledging that mamma knew nothing about his smoking, much less of his instructions to baby, saying, "I thought it would be cute to see Frankie smoke." I have no doubt the same offense was repeated the next time he had a penny and was beyond the watchful eye of mother.

A few years ago a cigarette was rarely seen in the United States except when used by those who had acquired the habit abroad. Then the sale was confined to the very large establishments in the very large cities. How rapidly has grown the demand. Today there are very few if any very small towns in the thickly settled districts where the cigarette cannot be obtained by any one who may be fortunate enough to possess the means to purchase.

Statistics show from 60 to 80 per cent of the boys below the high school in many cities and villages indulge in the use of cigarettes—occasionally at first, then habitually. The statement "below the high school" is made, for boys who habitually smoke the cigarette seldom or never reach a grade beyond the seventh or eighth.

Stop, boys! Do you realize the speed with which you are traveling down the stream of time, stunting not only physical growth, but so blunting the mental perceptions that when maturity is reached, instead of broad-shouldered, broad-chested men, erect in body, strong in mind, and steady in nerve, there is but the resemblance of a man—a puny, dwarfed, shriveled, undeveloped body and a mind deprived of intellect, sensibility, and will?

Charles Dudley Warner says: "I should attribute to the use of tobacco almost all the sin and misery in the world, did I not remember that the old Romans attained a very considerable state of corruption without the assistance of the Virginia plant."

We boast of our high grade of culture, and yet in this one habit the Americans are no better than the Pueblo Indians of New Mexico. True the "pale face" chooses the ready manufactured article and assumes a different attitude in which to enjoy his nicotined, alcoholic beverage, while the Indians manufacture theirs as occasion demands from corn husks and "fine-cut"—a far purer article than our boys smoke. Just here lies the evil. In the manufactured article, after the tobacco has been finely chopped, seived, and cut, the last step before placing it in wrappers is to sprinkle the material with an aromatic liquid, the composition of which is kept a profound secret. The tobacco is then placed in papers especially prepared for the purpose by being soaked in poisonous substances. Many times the evil effects of cigarette smoking is due wholly to the wrappers.

It is but a very short step from one bad habit to another, from the cigarette smoker to the loafer, when all ambition and youthful strength is sacrificed to low pursuits and brutish aims. But where must the blow be struck that will turn the stream and stem the downward course of degradation and ruin of America's proud sons?

The mother brings all her influence to bear, and is greatly aided in her work by the teacher; for educators of the present day have ever before them the character to be formed as well as the knowledge to be instilled. Sometimes this is all that is needed, for the combined efforts of two such potent factors can do much, in many cases to engage the heart of a child up to the age of 11 or 12 years on the side of kindness, generosity, and self-sacrifice, and to fill him, if not with ideals of greatness and goodness, at least with the feelings or emotions that enter into these ideals. But when the recipient age is past, boys begin to assert themselves, they have a tendency to resist if not to resent moral teachings, and it is difficult when he wishes to be a man and like the ideal which every boy secretly cherishes of the man he is to be, to withstand the many temptations which enter his childish mind as manly qualities.

It is at such times that he throws over board all his youthful training, and sets his frail bark afloat in the wild and tempestous sea of temptations. It is affirmed by some of our standard publications, that in time surgery will have been so far perfected that the physician will be called upon to correct the errors of the brain as well as discrepancies of the body. For instance, if a child is given to lying, stealing, or smoking cigarettes, the mother has but to call on the physician and state the malady. The doctor does not hesitate. Each tendency indicates the pressure of a particular spot in the brain which affects a particular set of nerves. The offending portion of the brain is removed and the child returns as fully cured as if he had been treated for the measles. This is very nice theory, and every mother will no doubt cry, "Speed the day when it can be made practical!" but until that glorious period does arrive something must be done to protect the boys.

It is the duty of each State to so educate her people as to make of them intelligent, moral, and responsible citizens. Can she do this and permit within her borders the sale of cigarettes to boys varying in age from five to twenty-one years? It is only when the State values the future mental, moral, social, and physical condition of her citizens more than the paltry revenue derived from the sale of cigarettes and accompanying evils will she put her heel on the serpents, and by wise legislation and judicious laws crush the evils that surround the boys of America. One State has already taken the lead by adopting measures prohibiting the manufacture and sale of cigarettes within her boundaries. May others follow in her footsteps till the good example shall spread from the Atlantic to the Pacific, and from the Gulf to the Great Lakes, thus freeing the Glorious United States from a curse equal to, if not worse, than that for which men, thirty years ago, fought, bled, and died.

THOUGHTS ON COUNTRY LIFE.

BY ELSIE E. CRUMP, '95.

THERE is no one who does not heartily enjoy a visit in the country, either in summer time when all nature is blooming and fair, or in winter when the snow is on the ground and there is promise of a ride in that big home-made sled, or some other amusement is at hand.

We all like to visit the country at such times, but how many of us really like life on the farm—having to remain there day after day, and month after month.

I am afraid such life often grows monotonous to some, yet when we look at it in one light why should we not feel contented and thank our lucky stars that we are afforded the privilege of being raised on the farm, the place where we find the necessary surroundings for the perfect man or woman.

First, look at the chance for physical development. Can we find better conditions anywhere than here where every breath of air is pure and sweet?

This, and good substantial food, temperate exercise, cheerful minds, and the regular homes for food, sleep, etc., are the very essentials of good health.

But is there danger of the intellectual part of our make-up not having a chance to develop? There can be found plenty of time for this work. For what else were those long, quiet evenings given, if not to improve our minds? And even if the country does seem a lonesome place we can find companionship in books; and what better companions could we ask for? We can make the acquaintance of the noblest minds the world has produced through the medium of books, and should we not improve this opportunity?

As a rule, books are hard to obtain, but they are worth the effort. Then another line in which we might work, if there be any taste in that direction, is music. I believe there is no greater pleasure on the farm than that derived from music.

Leave this phase and turn to another. In a perfect man there is something more than body and intellect. There is that prime element, morality. In the development of a good character, a boy or girl has the advantage over the one living in the city. Many things make this advantage. The surroundings are such that the temptations to draw the young folks away from home into company none of the best is lessened. As home ties become more binding, there comes a desire to shun bad companions.

This seems to be the rule in the country, that the young folks have such a stable character formed that they will follow the home teachings throughout their lifetime, while in the city the influence of companions is greater and often leads the weak into the wrong path.

For examples, look at Garfield and Lincoln, and other of our most honored men, who spent their early life on the farm, and who claim they owe their success in life largely to the training received there. So let us, if our lot be to live on the farm, live so that it may still be said that the farms send out men well able physically, mentally and morally, to cope with the changing world.

COLLEGE ORGANIZATIONS.

April 28th.

At the usual hour Pres. Scheel called the Hamilton Society to order. After roll-call, C. F. Doane led in devotion. The program of the evening opened by a very interesting essay written by J. C. Bayless. In this he told of a hunting expedition in the Black Hills about the time of the Great Wounded Knee fight. Mr. Holsinger next delivered a declamation in his usual forcible manner. The question for debate was, "Should the Government have power to restrict the Press?" The affirmative was argued by Messrs. Conrad and Farley. They brought out the fact that there was a great deal of literature published in papers and books that was of no benefit to anyone. They further argued that if the press was restricted a greater effort would be put forth to produce better literature and better papers. Conrad gave statistics showing that a great part of our newspapers was filled with gossip. C. A. Johnson and F. W. McQuaid on the negative showed that it was against the law to publish obscene literature today, and as for restricting the press they declared our form of Government could not exist under such restrictions. They further argued that the Government would soon become like Russia is today if the press was restricted. The Society acting as judge decided in favor of the negative. The select reading by W. Poole was quite amusing. V. Melzer gave us the news of the week. F. A. Dawley as music committee called upon B. W. Conrad, who responded with a vocal solo and piano accompaniment. R. S. Kellogg in his oration upon "Woman Suffrage" traced women's advancement from old patriarchal times downto the present day, and still she is not allowed many more privileges than the idiot, Indian, and lunatic. He prophesied that the time was not far distant when she would enjoy the privilege of helping to make the laws that govern her. J. Poole, in his discussion of "P. M.," held that it was practical, which is quite different from the way students generally treat it. F. A. D.

April 27th.

That the Alpha Beta Society is quite up to the standard in both attendance and interest, was manifest upon President Kimball's call to order. The Society listened to a quartet, "Dream Faces," by Misses Smith and Clemons and Messrs. Harling and Morgan, R. W. Clothier, Committee. Devotion by Walter Harling. H. A. Martin delivered an interesting selection, "The Coming Man," after which Alice Shofe read an enjoyable essay, "True Happiness." The Society appreciated H. A. Morgan's declamation, "Self Estimation." The affirmative of the question, "Is Evolution the best sustained theory of development?" was presented by Walter Harling and J. M. Westgate, who brought forward the recent evolution of the theory itself, based upon more perfect scientific knowledge; the origin of all life, both plant and animal, from like cells; the transition in animal life from lower to higher forms, as illustrated in the crocodile, birds, duck-bill whale, etc.; the continual perfection of species; evolution of man illustrated by comparison of Hottentot of Africa with a typical Caucasian; development of man compared to that of buds on a tree, all cells being originally alike, but through varying conditions, one formation became the terminal bud, typical of man, while others became lateral buds, illustrated by lower animals, which missed the more perfect development. The negative, presented by C. C. Smith and R. W. Clothier, said that a power able to create a cell from which all life could be evolved is likewise able to create these forms; the transformation of one species now existing from that entirely different is not evolution, but creation. Why the cessation of perfecting animal life? Why not more perfect forms of animal life from century to century, now? What is life? What power created life, and made this original cell? Evolution does not say. A psychical life is accepted by all but materialists, and evolutionists are silent here. The Judges, Messrs. Thackrey, Royer, and Farrar decided two to one in favor of the negative. The Gleaner was read by Geo. W. Fryhofer. Among its articles of interest were "Growth of Books," "The Buggist," "Learn to Observe," and "Facial Expressions." A general discussion followed. L. H. W.

Spare the Trees.

It is the ground itself that is the most perfectly protected by the forests of a country. The roots and rootlets of the trees bind together particles of soil so that it is not readily washed away. As a matter of course, hills shorn of their forests suffer most, their soil being washed down into the river or the valley below. This is the reason why valleys are generally fertile, and why so many hills are barren. The roots of trees and the accumulated mold render the soil porous and capable of holding a great amount of moisture. The rain and the snow are conserved and gradually given to the streams and soil below. Before a country has been denuded of forests its streams do not vary greatly in size from season to season. Rain or drought influence them but little; but after the trees have been taken away the rivers are roaring torrents during rains and mere threads during drouth.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Stella Hougham visited chapel Friday afternoon.

Prof. and Mrs. Nichols rejoice in the birth of a son on May 2nd.

Several wagon loads of students visit ever-interesting Fort Riley today.

Mrs. Kedzie will represent the College in a Farmers' Institute at McLouth, May 10th.

Mrs. McCreary and children have gone to Des Moines, Iowa, to visit for an indefinite period.

Prof. and Mrs. Hood enjoy a visit from the Professor's sister, Miss Mabel Hood, of Indianapolis.

C. R. Hutchings, Fourth-year, enjoyed a visit from his father from Pomona, Franklin County, Thursday.

The wet ground at the rifle range makes necessary a postponement of cadet target practice which was to have been today.

Professors Failyer and Mason will spend the first of next week at Garden City planning the planting at the Irrigation Station.

Hortensia and John Harman, Third-years, were called home to Valley Falls, Thursday, by a telegram announcing the death of their brother.

The Horticultural Department has just bought a large "Crown" meter to be used in measuring the water consumed on the irrigation plats.

Senator Rogers, of Washington County, spent a good part of Friday forenoon at the College, and found much to surprise and interest him. Mr. Rogers is a Regent of the State University.

Mr. H. V. Farris, of Kanopolis, who enjoys the distinction of being the earliest settler in what is now the Sixth Congressional District of Kansas, was an interested visitor at the College on Tuesday.

Enos Harrold, Foreman of the iron shops, and Assistant F. A. Marlatt have bought the Harrold foundry in town. Mr. Harrold will leave the College after Commencement to take charge of the business in which he will be assisted by Mr. Marlatt's cousin, Mr. Bloomer.

Mrs. Kedzie attended the council of the Social Science Federation of Kansas and Missouri, at Kansas City, the middle of the week and read a paper on 'The World's Fair Symposium. Industrially," besides doing her share of the talking in the many discussions of the body.

At the business meeting of the Y. M. C. A., Tuesday evening, the following officers were elected for the ensuing College year: President, G. W. Fryhofer; Vice-President, W. H. Steuart; Recording Secretary, F. E. Uhl; Corresponding Secretary, I. A. Robertson; Treasurer, S. Robbins.

The program of the Ionian Exhibition was a photographic reproduction—engraved—of Prof. Walter's characteristic hand-writing, and bore in the corner a seal containing the name of the Society embossed in gold, the whole making a souvenir of the exhibition that will be preserved.

Prof. Popenoe and Prof. Georgeson contribute interesting papers to the current report of the State Board of Agriculture. Papers read at the annual meeting of the Board by various members of the Faculty are also published. The report contains much valuable information, and should be read by every resident of the State and then put in the mails to carry its truths to eastern friends.

The last division of the Fourth-year class appeared in chapel Friday afternoon with orations as follows: "A Bad Habit," John Stingley; a debate on the question, "Are Equivocations ever Justifiable in Social Life?" was argued affirmatively by Phœbe Turner, and negatively by Sadie Moore; "A Struggle for Existence," V. I. Sandt; "The City of the Dead," Jennie Smith; "The Proposed Suffrage Amendment," M. V. Hester; "Personality an Element of Power," Lucy Waters; "What We Owe to Pioneers," J. E. Taylor; "Are We a Prosperous People?" W. O. Staver. Prof. White, in behalf of the Fourth-years, thanked the audience for the generous applause they had received during the year.

GRADUATES AND FORMER STUDENTS.

Mrs. Emma Hoyt-Turner, '80, resides at Cloquet, Wisconsin.

Lyman H. Dixon, '88, is thriving as an architect at Buffalo, New York.

Rev. D. E. Bundy, '89, is now in charge of a pastorate at Holton, and his classmate, Rev. R. N. Waldraven, it stationed, for the present year, at Kickapoo, Kans.

Lieut. Albert Todd, '72, is now stationed at Fort Hamilton, New York.

Bert R. Elliott, '89, is Superintendent of a fruit farm at San Diego, Cal.

W. O. Lyon, '93, is visiting at College after a year's teaching near Clay Center.

Ivan B. Parker, '92, has located at Morland, Kan., for the practice of medicine.

A. Dickens, '93, having finished his school at Chalk Mound, finds himself again at College.

E. W. Ginter, Second-year in 1892-3, visited College Wednesday and Thursday of this week.

Fletcher M. Jeffrey, '81, is a member of a prosperous law firm at Cripple Creek, Colorado.

W. J. Lightfoot, '81, is United States Deputy Mineral Surveyor at Cripple Creek, Colorado.

Sam Kimble, '73, has moved from town to his newly built "Castle" on the hill near the cemetery.

George Walter Washington, student in 1890-91, was married, May 2nd, to Miss Carrie Drake of College Hill.

J. W. Ijams, '90, changes his address from Pine Ridge Agency to Orlando, Ok., where he swings the birch.

F. G. Kimball, '87, was home on a visit this week, and improved the opportunity to visit his alma mater a day or so.

R. A. McIlvaine, '92, after closing his school is around College. He contemplates taking up post-graduate work.

Minnie Reed, '86, read a paper on "Kansas Mosses" at the meeting of the Social Science Federation at Kansas City, this week.

Maggie Steuart, Second-year in 1891-2, came up from Winchester Saturday to visit her brother and friends. She visited College Monday.

E. A. Allen, '87, writes that he is Principal of the Chilocco Industrial School, Indian Territory, and expresses the hope of visiting the College soon.

Joanna Freeman, Second-year, received a visit from her father from Riley and a cousin Mr. Graves of Nebraska this week. They attended chapel Wednesday morning.

Porter Westgate, Second-year in 1891-2, and Jessie Whitney, student in 1891-2, were married, Tuesday, May 1st The young folks will live on the "Westgate place" on College Hill.

W. J. Towne, Third-year in 1891-2, has been made Editor-in-chief of the *Polytechnic*, the journal of Rensselaer Polytechnic Institute, of Troy, N. Y., "the oldest engineering school in America."

G. L. Clothier, '92, County Superintendent, has issued a booklet program of the Wabaunsee County Normal Institute, to be held at Alma from June 18th to July 26th. Prof. Olin (ours) is to be conductor, and H. W. Jones, '88 (Principal of the Alma Schools), and Superintendent Clothier, instructors. Prof. Willard's name appears in the lecture course on the topic, "The Air We Breathe."

In reviewing specimens of printing received, the *Inland Printer* has this to say for a firm of which A. D. Cozad, student in 1887-8, is apartner: "Cozad Brothers, Kansas City, Kansas, submit a few samples of exceedingly neat printing, the designe being elegant and execution admirable. A card with rule-work design shows almost perfect contour of rules, which A. D. Cozad states were curved with his fingers only. We have seldom seen more creditable work."

The Ionian Annual.

The Annual to which we all have been looking forward so has long come and gone. For weeks we have been hearing around College halls the rustle of preparation, and many a time have our hearts gone out in sympathy for the busy workers as they flittered hither and thither in their untiring efforts to get the girls together to practice. But the results of the Annual plainly show that they did get them together, and it must have been a good many times.

Early was the house crowded to overflowing. Promply at eight o'clock the curtain was raised, and "beautiful," "splendid," "isn't it pretty?" was heard all over the house. As the curtain was raised, there appeared to view from behind the roll as it was lifted higher and higher, the prettiest scene that an audience has ever seen in our chapel.

From a common center in the ceiling hung, in the form of a cone, drapery so arranged that the visible portion of the stage was in the form of a semicircle. On either side, the red drapery was pinned up as if making an opening into a fairy tent, while the back drapery was of a soft white color, making a charming scene. Within the tent were two beautiful parlor lamps and a little to one side sat the President. It all looked so pretty with the reflection of the lights that every body was charmed into perfect silence for a moment; then came an outburst of applause that plainly indicated the appreciation felt by the audience.

The program opened with a beautiful piano duet by Misses Farwell and Rhodes. After invocation by President Fairchild, Mary Lyman gave the address of the evening, entitled "Arnica," which was delivered with her accustomed ease and grace which always adds so much to the appreciation of a production.

An abstract will show for itself some of the principal features: Arnica is a medicinal plant, the preparations of which are used for their soothing effects on wounds and bruises, thus restoring quiet to the irritated parts. So in life, many are the occasions on which we need the application of arnica that will have its effect in the truest sense. Take for instance one who has been deprived of educational advantages, other than the district school. He, however, used his opportunity, when it came, to attend the Kansas State Agricultural College, and while here, he studies hard, but timidity hinders his enjoying the social relationship with his fellow students, who in turn speak of him as one who always has his lessons, but that is all. Discouragement follows, in respect to those things other than his studies; he isolates himself, seeming to forget that his talents are for varied use. Arnica applied by a kind friend, in the shape of a just appreciation of success in recitations, and also by letting him see the confidence placed in him. Life could then be enjoyed in a far greater degree. Another case for treatment is one troubled with self-consciousness. If this be a young gentleman, he will think that perhaps his tie is a little askew or that one cuff shows and the other doesn't, whether or not he pulls it down. Or, if this be a young lady, she will not so much as look up, but will do various things to pass away the time. Now, we inquire, how can a person be made to realize that he is probably not the best looking one that the company has ever seen, and quite likely not the homliest. Arnica, as over praise, is very offensive; it is also exceedingly depressing to be told how red the face was, when we were in a position not adapted in the least to our temperament. What we have to learn is, that when reading, speaking, or singing in public, the mind must become so saturated with the work in hand that there will be no room for a single thought of self. What is back of all this is well expressed by Shakespeare:

> Let come what may, I mean to bear it out,
> He is not worthy of the honey comb who shuns the hives because the bees have stings.

Arnica, then, given as a hearty commendation for greater self-control, is a remedy that is very helpful. Another trying case is that we are sometimes thorns in the flesh of others, because of our peculiar sensitiveness, thus resembling the sensitive plant. The tendency is to be continually on the alert for slights. Those without such blemishes will say this is a desperate case, and they will handle it very carefully, for they are aware that if any direct attempt is offered as help it is considered as an imposition. Fault-finding traits are common. To deal justly with these requires one who realizes that this is something that Arnica can cure. It will be administered slowly, yet steadily, and the patients will ultimately recognize that it was the warm and continued love that proved so efficacious. And now what remedy shall we recommend for this another case, the best looking, the most intelligent and interesting young man in the community—in his own estimation? He waxes and twists his mustache, the first on special occasion, the latter constantly. He drops his r's, and all his a's are ä's. We find him a critic of art, music, books, other persons, handiwork, races, horses, and girls. It is an extraordinary exception, a humiliation on his part to admit that the result of his work has been surpassed by that of any other. Now, how shall Arnica be applied in this case? What preparation is best adapted for this case? To what part of the physical economy shall it be applied? How often used? These questions we are unable to answer. Therefore we retire from the case.

Next came a vocal trio, entitled "Vocal Waltzes," by Emilie Pfuetze, Hilda Leicester, and Gertrude Lyman. They responded to an encore with a parody on, "Down on the Swanee River" which gave some interesting accounts of "Keep Off the Grass," remarks we so often hear from our President in chapel.

The discussion, "Two Aspects of a Popular Question," by Ada Rice and Dora Thompson, thoroughly exhausted the woman dress problem. It was as good if not the best debate of the year, and thoroughly demonstrated the fact that the girls were posted as to the proper dress apparel for ladies.

Miss Rice's abstract from the standpoint "Health:" This is an age of progress. We are confronted with this encouraging fact in the discussion of the present question. This is also an age of reform; for, in order to progress, we must reform old habits and customs. Among the hundreds of demands in this direction is this, for the "emancipation of woman." But look for a moment at the average American woman. She comes before you with one of these demands, but her very appearance, from the stuffed song-bird on her hat, the wasp-like waist, to the pointed-toed high-heeled shoes on her feet, pronounces her either fickle, unthinking, or incapable, certainly not ready for equality. This fantastic costume proves to the world that what she needs most is emancipation from frivolous, idiotic, disease-producing dress. "More women die annually from the effects of faulty dress than from all contagious diseases combined." Diseases resulting from tight-fitting waists, tight collars, tight gloves, tight sleeves, tight shoes! These results not only tend to make a woman homely, unhappy, and stupid, but succeeding generations too often reap the results of her folly. What kind of costume would be an ideally healthful one? For the woman who wishes to be useful, I would have a dress that would permit "absolute freedom of movement." It must be supported from the shoulders, give sufficient warmth with the least weight. The skirt must be short enough to escape the floor in walking and the stairs in climbing. It should be becoming to the wearer, but must be subservient to the body, not its master.

Miss Thompson's abstract from the Beauty standpoint is as follows: In the historical record of the War of Roses is typified a strife which now wages in

our fair land. This modern war is for precedence and power, and the kingdom is fashion. The true nobility wear for their emblem that which pleases the eye and appeals to the æsthetic taste, while the aristocrats wear a badge which offends the eye, and, to gain a little ease, trample on taste. What is required is grace and beauty combined with comfort and convenience. A dress reform, to be popular, must be gradually introduced, but no system of grading would ever reconcile the eye of mankind to the bloomer costume or any other dress reform that imitates the dress of a man. A woman can make the impression of grace and beauty and refinement only by following the laws of her feminine being. Beauty is a duty women owe to society, but beauty and healthful development are synonomous. The Greeks recognized this truth and illustrated it in their works. Our tastes have become so perverted that our modern ideas of beauty exhibit a very different form from that shown by the Greek sculptors. Let the woman who desires to be truly beautiful—and what woman does not?—learn to hate and forget a fashion plate, and have her gowns so designed as to suit her own personality. To be beautiful for her it must accord with her habits of life and represent herself, not another. Let the lines of the gown follow those of the body, not a body wide at the shoulders and tapering to the feet: that is masculine; but the outline and proportions as are shown by the Greek sculptors. Let our plea, then, be for beauty—beautiful forms arrayed beautifully. If it is right for people to get as much beauty as possible into their lives, then it is woman's duty to bestow care and thought on her dress, and if other artistic studies are worthy, so is the study of art in dress worthy, for it will work with the other arts to help on the divine in human life.

After the debate some very interesting styles of dress were exhibited by means of the magic lantern.

Following came a double duet composed of Misses Mary Lyman, Emilie Pfuetze, Gertrude Lyman, and Flora Waugh. The title of their selection was "Night of Stars and Night of Love," which received a hearty encore, to which they responded with "Two Forest Nymphs."

A very entertaining number of the Ionian Oracle was presented by Florence Corbett, after which a semi-chorus was given, entitled "Fairy Voices." It was a beautiful selection, and captivated all lovers of music.

E. Hortensia Harman's apostrophe, entitled "Memory," can only be appreciated by those who heard it. Her pleasing manner of delivery caused hearty applause when she concluded. She said:—

"Dear yesterday, glide not so fast,
O, let me cling
To thy white garments floating past,
Even to shadows which they cast,
I cling."

Is it the dawn, the noontide, or the twilight of yesterday, whose flight is thus mourned? These, and more; it is to yesterday's all, her memories, be they sweet or sad, that humanity clings. And what is this power of yesterday that comes to all alike, and yet alike to none,—to one, nothing, to another, everything? It is Memory, stately sovereign of Thought's broad realm. Among her close companions are Sorrow and the dark sisters, Regret and Remorse. At her touch, hope that is dead makes to re-dream rosy dreams of bygone hours. Straying ever through her fields is glad Innocence, hand-in-hand with laughing Love. And how does Memory reveal herself? A flower's perfume wafted across from the garden of the past, if inhaled, and some moment of yesterday, maddening or restful, is relieved with the old intenseness. A strain of music, by its sweetness, its sadness or mirth, turns the thoughts backward, ever into Memory's realm, and a simple picture into which an artist has put his heart will often bring tears to the sternest eyes, because of memories it brings. Enthusiasm and Hope, alone, will find their goal but crumbling Apples of Sodom when reached. Strong Reason and hardy Experience culled from Memory's storehouse, and some in the fields of the years will yield the millenium that is longed for. Though it be hard to cling to memory, stern, relentless, must we only pray, "Let this cup pass?" No, and if our Gethsemane lie in Memory's domain, we are stronger, better, purer, for having said: "not mine, but thine." A thought, an act, may be for years as if dead, and the frozen earth closed over it, and yet a familiar footstep, some old song, will bring it surging back over the soul. It has been part of our very being, and its memory is eternal.

Again the audience was entertained by music, a quartette entitled "Invitation to the Dance" by Mary Lyman, Emilie Pfuetze, Flora Waugh, and Mabel Selby, and they responded to an urgent invitation from the audience, with a comic production.

The last pleasing feature of the program was a series of scenes in the life of Joan D' Arc. The first represented her as a peasant girl; the next, where her mission was made known by the angels; the third, where her sword and shield were given to her by Divine authority; the fourth was a thrilling representation of her burning at the stake; and lastly a beautiful statue which was dedicated to her in remembrance of her noble life and work she had accomplished. Kate Pierce, with her strong, clear voice, read the story explaining the scene, which added much to the attractiveness. Everything passed off nicely, and with a few well-chosen words, the President bade all good night. Every body was highly entertained and the Annual was declared a grand success byall.

E. L. F.

Moffett the photographer will make photos for students during the remainder of the term at a great reduction—prices which will enable every student to exchange photos before leaving. Every picture guaranteed to be first-class work. Call at the Studio for prices and see samples. Remember the place is 122 North Second St.—*Advt.*

The Weather for April.

April was warm, dry, and windy.

Temperature.—The mean temperature was 57.63°, which is 4.29° above normal. There have been but four warmer Aprils in the past thirty-seven years. The maximum temperature was 92°, on the 28th; the minimum, 25°, on the 5th—a monthly range of 67°. The warmest day was the 28th, the mean being 77.75°; the coldest was the 9th, the mean being 41.75. The greatest range for one day was 50°, on the 2nd; the least, 10°, on the 20th. The mean of the observations at 7 A.M. was 48.50°; at 2 P. M., 70.57°; at 9 P. M., 55.73°. The mean of the maximums was 74.67°; of the minimums, 44.17°, the mean of these two being 59.42°. The mean for the first ten days was 51.83°; for the second ten days, 58.57°; for the last ten days, 62.50°; normal for these ten-day periods being respectively 49.63°, 53.34°, 56.96°. Apparently the last killing frost of the season occurred on the 10th, and a light frost on the 22nd.

Barometer.—The mean pressure was 28.784 inches, which is a little above normal. The maximum was 29.273 inches, at 7 A. M. on the 5th; the minimum, 28.410 inches, on the 18th—a monthly range of .863 inch.

Rainfall.—The total rainfall was 1.33 inches, which is 1.38 inches below normal. The deficiency for the year is 2.32 inches.

Relative Humidity.—The relative humidity was 82.33, the minimum being 54, on the 5th.

Cloudiness.—There was one day entirely cloudy; three, five-sixths cloudy; two, two-thirds cloudy; one, one-half cloudy; six, one-third cloudy; three, one-sixth cloudy; and fourteen, cloudless. The cloudiness was twenty-three, which is twenty below normal. There was a fog on the morning of the 15th.

Wind.—The wind was from the south and east eighteen times, southwest fifteen times, northwest fourteen times, southeast eight times, northeast six times, north and west three times, and a calm five times. The total miles of wind was 11,226, giving a mean daily velocity of 374.2 miles, and a mean hourly velocity of 15.59 miles. The maximum daily velocity was 689 miles, on the 19th; the minimum daily velocity was 102 miles, on the 5th; the maximum hourly velocity was 45 miles, from 11 A. M. to 12 M. on the 6th.

Below will be found a comparison with the preceding Aprils:—

April.	*Number of rains.*	*Rain in inches.*	*Prevailing Wind.*	*Mean Temperature.*	*Maximum Temperature.*	*Minimum Temperature.*	*Mean Barometer.*	*Maximum Barometer.*	*Minimum Barometer.*
1858	8	4.64	.....	51.66	87	30	.....	.....	.....
1859	7	2.54	NW	49.43	90	22	.....	.....	.....
1860	2	.12	NW	57.91	90	30	.....	.....	.....
1861	1	2.00	S	54.18	93	31	.....	.....	.....
1862	6	3.63	N	49.68	78	31	.....	.....	.....
1863	5	9.12	S	59.43	93	39	.....	.....	.....
1864	5	1.68	NW	47.52	79	27	.....	.....	.....
1865	9	2.93	NW	51 06	76	23	.....	.....	.....
1866	.....	.....	.....	.....	.....	.....	.....	.....	.....
1867	3	2.44	N	49.73	75	31	.....	.....	.....
1868	7	1.96	N	48 25	83	27	.....	.....	.....
1869	6	2.20	SE	48 10	77	22	28 72	29.10	28.15
1870	5	.50	SE	52.63	85	19	28.74	29.00	28.40
1871	7	3.00	SW	57.07	91	32	.....	.....	.....
1872	7	2.06	SW	56.42	89	30	.....	.....	.....
1873	9	1.97	NW	47.31	91	23	.....	.....	.....
1874	3	1.40	NE	46.76	84	24	28.75	29.14	28.33
1875	7	1.60	NW	48.45	82	19	28.67	29.04	28.32
1876	5	7.52	SW	53 58	84	26	28.72	29.16	28.36
1877	6	4.08	NE	53 08	84	20	28.65	29.10	28 19
1878	5	2.02	NW	57.77	85	27	28.50	28.95	27.98
1879	8	3.21	NW	55.73	80	18	28.56	28.92	28.19
1880	2	1.08	SW	56 79	89	30	28.53	29.02	27.88
1881	3	1 56	NW	52 09	82	13	28.58	28.90	28.11
1882	7	3.47	SW	56 14	86	32	28.59	28.99	28.14
1883	7	2.36	SW	55.58	93	31	28.50	29 02	27.89
1884	12	3.23	NE	49.47	85	27	28.55	28.91	27.95
1885	5	4.03	NW	53.73	81	28	28.52	28.85	28.17
1886	5	5.26	NE	54.51	88	18	28.83	29.26	28.02
1887	7	2.85	SW	58.14	98	23	28 78	29.29	27.96
1888	6	1.38	E	56.72	93	28	29 10	29.53	28.64
1889	3	1.74	.....	55.27	92	26	29.04	29.41	28.47
1890	5	1.74	SW	56.25	93	26	28.91	29 29	28.38
1891	6	1.86	E	56.24	91	21	28 87	29 32	28.44
1892	10	2.91	SE	51.69	85	26	28.79	29.27	27 95
1893	7	1.28	NW	54.34	98	26	28.72	29.07	28.04
1894	8	1.33	S&E	57.63	92	25	28 78	29.27	28 41
Means	6	2.71	NW	53.34	86	26	28.71	29.13	28.17

WIND RECORD.

Agril.	*Total Miles.*	*Mean Daily.*	*Maximum Daily.*	*Minimum Daily.*	*Mean Hourly.*	*Maximum Hourly.*
1889	6099	250 2	587	77	10.42	37
1890	9577	313.2	710	103	10.30	51
1891	7341	258.3	456	51	10 76	35
1892	11196	373.2	963	134	15.55	49
1893	10172	339 2	652	92	14.13	45
1894	11226	374.2	689	102	15.59	45
Means	9269	334.7	676	93	13.29	44

E. R. NICHOLS, Observer.

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I will sell for cash my stock of shoes and fixtures. Stock in good shape. Trade good and well established. Best location in the city. This is a splendid business opportunity, and at the same time one can enjoy the College and school advantages of Manhattan. Address, Leslie H. Smith, Manhattan, Kansas.

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The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

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All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary

SPELLING.

BY PROF. O. E. OLIN.

"Oh dear! oh dear! I can never learn to spell;
I shall always be a dunce I know very well."

ENGLISH orthography, like man, is "fearfully and wonderfully made." What with silent letters, consonant combinations, and numerons equivalents, our spelling book presents to the foreign student an intellectual tangle. We have tried to represent Greek and Latin and French and German sounds with English combinations till we have a rare collection of absurdities headed by the absolutely unpronounceable "phth." Every year the natural sciences are adding to the difficulty by bringing in words of unusual length and complexity.

Much that is urged against our spelling is due to our endeavor to be orthographically honest. No other language on earth has attempted to assimilate so much of foreign material. The English has drawn words from every other language, and in adopting them has tried by various expedients of spelling to preserve the identity of each. So it happens that we have long lists of words that are spelled for the eye and not for the ear. "Pneumatic," "pseudonym," and "catarrh" may give no hint when pronounced, but to the eye they infallibly proclaim their origin. If it were not for this desire to keep the derivation of words, English spelling would be very much simpler.

It is hardly fair, however, to change to the account of the language what has grown up about it in its effort to become cosmopolitan and yet give credit to all its factors. Any other language would present the same irregularities, if it had attempted what the English has really accomplished. The Anglo-Saxon, which is the original form of the English, was as simple in orthography as the German of today. It had no silent letters, and its vowels did not, as now, change sounds, in the same combinations. But in its conflict with the Norman French in the 12th and the 13th century, its nature was greatly changed. Among other things, initial and final "g" was softened into "y" in many cases; initial "g" and "k" before a consonant were no longer pronounced, though retained in the spelling; and the harsher sounds of the language were either changed or dropped altogether through the inability of the Norman to pronounce them. The combination "gh" was used to represent the Saxon gutteral "h," but the Norman never gave it its proper sound. The violence of this struggle of the languages is shown in the distortion of English words; as, for instance the Saxon "genoh" to the English "enough."

The silent letters of our lauguage, though very troublesome to spellers, are not wholly useless, for they are mute witnesses to the growth and conflicts and perils of the vocabulary; and as such they are the especial care of philologists who are bound in the interests of their own science to oppose the writing of "programme" with one "m," or the spelling of "pneumonia" in any but the old-fashioned way.

Sometime, when the links that bind us to the past have weakened, when our veneration for antiquities has lessened, when our curiosity has been fully satisfied, or when some one proves conclusively that we can, as Voltaire said of the English people, "gain two hours a day by clipping words," a rational system of phonics will be proposed and adopted. Future generations may then call the spelling reformer blessed, but English spelling will lose its picturesqueness, its history, and its romance, and sink to the dead level of mere utility.

The old-fashioned spelling school did a good work in its day, and, I sometimes think, might be revived with profit now. We have made many improvements in methods of teaching in the last thirty years, but we have not found the way to make better spellers. Almost every teacher who deals much in written work could easily match the best pages of Artemus Ward or Samantha Allen. "Liquis" written in sober earnest for "likewise" would be considered a supreme effort for Josh Billings; yet such orthographic gymnastics are not so very rare in these days.

A great deal of ridicule has been heaped upon the old method of oral spelling and pronouncing syllables. Much of this was merited, yet that method had its advantages, not only in spelling, but in reading also. Its drill gave to boys and girls a key to the measurement and pronunciation of words, that pupils trained in written spelling and the word method of reading almost wholly lack. The average product of the present method is almost helpless in the presence of new or unfamiliar words. I have nothing to say against the new methods of teaching reading: they are improvements over the alphabet method; but, in order that they make children independent readers, they need to be reinforced or supplemented somewhere in the course of study by thorough drill in syllabication. The spelling class is the proper place for this; and at the risk of being ranked as a pedagogic heretic, I believe we must yet go back to some modification of the old style oral spelling with pronunciation of syllables.

AN IDEA.

BY FANNY E. WAUGH, '91.

IT seems to have become the thing for college classes, societies, and cliques to try to outdo each other by doing something original—cutting new capers on Hallowe'en night, introducing new features into entertainments, etc. College graduating classes, in particular, are ever seeking something "new" to do just before disbanding, seemingly with the wish to live in hearts they leave behind them, since this is "not to die."

Herein we hope to present an idea for such an action worthy of the consideration of the present Senior Class—or some one else. We take for our text the following from a recent issue of the INDUSTRIALIST:—

> The Seniors of the Kansas State University have decided to contribute from three to ten dollars each toward a fund to assist poor students. The money will come out of the commencement fund. This action is a most commendable one. It shows the class of '94 have their hearts, like their heads, in the proper place.

The idea is a splendid one—worthy of Kansas boys and girls!

We are proud of the fact that our College is the institution of the State where poor boys and girls can receive a good education, and with it the respect of their fellow students—and class honors, if there be any to bestow.

The education part is oft times much harder for them to get than either the respect or honors, because of lack of funds. One must eat and be clothed whether he is educated at college or not.

Our idea is not to make the education easier to obtain by the establishing of a fund. Do not think we would have this a charity fund for the maintainance of lazy students, as well as the aid of poor ones. It should be simply a fund, and he who drew out should also pay back, as soon as he is able, the exact amount which he had the privilege of using. This certainly is fair, and does not savor of charity.

In order to have such a fund to use, it is obviously necessary to first obtain it. We will suppose a case in which our Senior Class shall emulate the Senior Class of the University. They take the matter in hand and decide that they will establish said fund by each donating a certain sum, or what each can afford. They will earnestly request every other student in college to do the same. The invitation shall be extended to all graduates. Also, anyone wishing to die and bequeath a fortune to this philanthropic institution will be informed that the sum will be received with thanks in proportion to its size.

This fund might be controlled by a board of trustees appointed by the Faculty, consisting of ladies and gentlemen from the Faculty and from among the students. This board would, of course, have power to decide whether a case in hand need relief or not; and power to loan money when the proper arrangements were made.

How might such a fund be advantageous?

Sickness is likely to overtake poor people, as well as those more comfortably situated. Work, upon which daily bread is dependent, stops during sickness, and sometimes long after. If there were a fund which might be resorted to it would often alleviate great anxiety of mind, to say the least.

Many students attend college a year, then teach school, or work on the farm until they have hoarded up a little pile barely sufficient to carry them through another year. Hard times or poor luck sometimes keeps these students at this alternate learning and working for twice the number of years sufficient to finish the course, could they keep steadily at it. We know from cases which have come under our observation that students are sometimes years in completing the course (and often give it up entirely from sheer financial discouragement), when with such a fund at their disposal they might finish first, and be better prepared to pay for it afterward. Neither money nor time would then be wasted by students dropping

out in the middle of a term, leaving studies incompleted.

It may seem that there is not much use of such a fund just now, but still we choose to believe that it would be a good thing, and would in time come to be used, and used to good advantage.

We modestly place this suggestion, if it is worthy even that faint appellation, before the public, which we believe ought to be interested in carry ing cut this or a similar plan, feeling sure that whatever society, or class, or body of people, or individual, shall make the initiative movement in establishing a students' fund, will not only confer a lasting favor to the College, and perhaps to "countless thousands," but will make for itself a reputation, lasting and greatly to be envied. It will also have done something decidedly "new."

FARMING BY IRRIGATION.

BY PROF. C. C. GEORGESON.

IT was my privilege, recently, to visit a portion of Colorado around Greeley and Fort Collins where farming is carried on extensively and successfully by means of irrigation. This region is watered by the Cache-a-la Poudre, a stream which meanders through the broad and fertile valley of the same name, and from which upwards of sixty canals take their lead. It is a beautiful valley, presenting as it does a broad expanse of level land, bordered on the west by the mountains, and on the other sides by low ridges. At first sight a stranger is apt to be deceived in the lay of the land. Owing to the contrast between the mountains and the flat valley, it appears as though the land sloped toward the mountains; but in reality there is on the average a fall of fifty feet to the mile from the mountains down the valley. Alfalfa, wheat, and potatoes constitute the main crops, and the values of land and water rights are based on the yield of these. Enterprising real estate men even go so far as to post sworn statements from the farmers, in conspicuous places, which show the fabulous yields of these staples from lands watered by certain canals. Corn is a failure there, owing to the elevation, and only early varieties are grown, and these to but a limited extent. But fruit growing and truck farming are, on the other hand, on the increase, the mines and grazing regions to the north and west affording goodmarkets for these products.

All their farming is on the intensive plan. The conditions give special emphasis to the almost trite saying that "it pays to cultivate well what is cultivated at all," and the neat homes and the careful methods everywhere apparent bear evidence to the prosperity and industry of the farmers.

Farming there would be impossible without irrigation; with irrigation it is a success beyond what may be hoped for even in favored regions in the rain belt.

The question arises if irrigation could not be made equally successful in Kansas. We worry along with an insufficient rainfall, and accept short crops and more or less complete failures as chastisements from Providence, while our streams carry enough water to the ocean to insure a full crop every year. Our agriculture would profit immensely by a system of irrigation by which this water which now runs to waste could be used to supplement the rainfall. Even Central and Eastern Kansas, where crop failures are few but shortages many, would find it of incomparable advantage. And the same is true, in fact, of all sections of the United States. Nowhere would the ability to irrigate a crop at a critical period come amiss. But, confining the case to Kansas, there are no two opinions on the subject.

There are three general sources of water supply: (1) By diverting the water of streams into canals; (2) by collecting surface drainage in storage tanks, or reservoirs constructed in suitable depressions; (3) by raising water to the surface from the "underflow." All three methods will find their appropriate uses in Kansas.

Where the streams can furnish the water and the contour of the land permit of its application through canals, this is doubtless the cheapest and most efficient system. Irrigation from resevoirs must necessarily be confined to limited areas, and to regions where the surface drainage can readily be collected. It is for the individual farmer who finds himself favorably located for the construction of tanks to make use of this plan. The same is true of pumping plants. That the latter can be operated successfully is demonstrated by the numerous small pumping plants in the Arkansas Valley. Their practicability is limited only by the amount of water that can be raised; and the near future will doubtless solve this problem satisfactorily. Near Greeley, Colorado, I saw one plant which irrigated ninety acres by a pump worked by a ten-horse power boiler, the water being raised seventeen feet. When the tide of prosperity shall again set in, and capital shall seek investment in new enterprises, it will find few investments more productive of dividends than the construction of irrigation systems in Kansas. But our farmers must take hold of the problem themselves, and by their zeal for the cause call capital to their aid.

VACATION.

BY JOSEPHINE C. HARPER.

I HAVE, several times of late, been asked about the way I intended spending my vacation. The last questioner was a young man, and playing the Yankee, I answered by asking him the same question, and received the laconic reply, "Plow corn and hoe potatoes."

A vacation does not imply a cessation from all occupations, but rather a change from the present occupation to something else. The best way to spend a vacation depends almost wholly upon the individual and the object to be attained.

When school closes, the students of this institution will scatter all over the State. Some go home to help on the farm, where there is every opportunity for putting into practice the knowledge acquired in that line at school, and in this way father a well-earned vacation; others will attend the institutes preparatory to teaching in the fall, others will earn the wherewithal to pay the expenses for another year at school here or elsewhere.

In the main, books are to be laid aside and the industrial training put into practice.

The boy who has been working in the shop will find ample opportunity for testing his skill with tools in making articles that add so much to the beauty and convenience of a house, and repairing about the premises. The girl who for the past year has been so deft and skillful in preparing dinners and lunch, waiting on the tables, etc., will find the home folks equally appreciative of a neatly set table and a well-cooked, savory meal. The ever-full and overflowing family sewing basket stands waiting for the girls who have been learning to fell, darn, sew, and make button holes. Nearly every one will find work ready and waiting to be done.

Not long since I read somewhere that Kansas was a good State to work in, but a poor place to play in, and that all work and no play makes Jack a dull boy; that we are so far from the mountains, the coast, and the lakes; and that there really is no place in our borders where a person or persons could go and spend a day or week at small expense. All this is, in a measure, true, but why take one's pleasures in doses of a day or week like a dose of medicine taken to break up some malady afflicting our body. Why not enjoy them as we do the air we breathe, the food with which we support and nourish our bodies—a little at a time. There can be a fishing party now and then, and if not enough fish are caught to broil on the coals of the open fire by the stream for the evening meal, that need not lessen the pleasure of the outing in any great degree.

A party go horse-back eight or ten miles over the hills and prairies, in the cool of the morning, with breakfast partaken of under a friendly tree, watching the while the sun sending its first golden rays over yonder hill, ushering into life a new day, a sight once seen never to be forgotten.

Those fortunate enough to live near a stream of sufficient size for boating have a never-ending source of enjoyment at hand. A picnic in the day-time is usually held in a grove or woods, giving good shade from the sun, while a picnic in the evening is more enjoyable in the open meadow, or better still, on the top of a hill, with the friendly moon beaming gently down upon all nature gone to rest.

Of light reading matter for summer I know of nothing better than some well-written book of travels, with a map and encyclopedia near by for reference.

If we will all take every little pleasure as it comes to us and make the most of it, we need not go out of the State for the sole purpose of having a good time.

One man with whom I am well acquainted bought a worn-out farm about three miles from Lake Erie, says a writer in the *Ohio Farmer*. His friends said he must be growing crazy (as he had been in the asylum a few years previous) to buy that farm. He went to work sowing lots of clover, plowing it under, and sowing wheat and seeding with clover again in the spring, then plowing under another crop of clover and sowing wheat. After he had got over the place with two crops of clover mixed in the soil the old skeptic began to say, "Why, don't it beat all what crops that man raises on that poor farm?" The most stock he had on that place at any time for ten years were two cows and three horses. But he is not in the asylum today.

FARM NOTES FROM VARIOUS SOURCES.

One of the most comfortable things that can be found on the farm is a walk from house to barn that will be free from mud in all weather. It is not only comfortable to the one who goes along it, but will add years of life to the careful housewife and self-respect to the whole family.

The farmer who buys what he can produce at home (and many of them do so) suffers a loss, as he should take advantage of the home market and thus get a better price for his labor. The best way to keep expenses down is to aim to grow a full supply of all that is needed for the family, if possible, and the profit will be greater. Luxuries can be had with a garden of small fruits.

A horse-dealer, who handles over 10,000 horses a year, told an exchange that if he were to offer advice to farmers he would say: Secure mares 16 hands high, with some warm blood in them, well ribbed out, good quarters, oblique shoulders, deep through the heart, with plenty of room for the lungs, and with, above all things, an intelligent, blood-like, bony head. Breed for level-headedness, and, above all things, forbid the men and boys about the place teasing the young colts.

Many farmers become discontented with their lot when they observe how rapidly some men in other walks of life accumulate wealth. There is much that is superficial in this view. The men who make great fortunes are the ones who come into the notice; but how often does the thought that for every merchant who counts his wealth by hundreds of thousands, there are hundreds of other merchants who have failed entirely? Now and then is heard of a lawyer or a physician whose fees in a few years amount to a reasonable fortune; but for each of these there are hundreds who never know one month where the money is to come from to pay the bills of the next.

That it is as easy to raise a fine pure-bred horse or cow as a scrub, is a statement that is frequently made in country and city papers. Such notions are simply false, and tend to bring discredit on well-bred animals. The man who buys a pure-bred animal and expects it to live and thrive on its pedigree and the care ordinarily given to scrub animals, is likely to lose money and accuse the man of whom he bought of cheating him. The simple fact is, that good stock must have good care. But it pays to give fine animals the extra attention they demand. It pays in two ways—it pays in hard cash, and it pays by making the man who raises them a better breeder. Degeneracy will as surely be the result of neglect as great excellency is the result of great care in breeding.

Corn is a plant that can be improved by careful selection. It has been claimed that corn "runs out" in some sections, but this is due more to carelessness in selecting seed than from any other cause. Varieties of corn have been produced that have yielded twice as much per acre as the original varieties from which they were taken. Every farmer should be interested in saving his seed, selecting the best ears from the largest stalks. Those who have good seed at this season will receive benefit therefrom later on. When planting corn, try and get something more than the regulation twenty or thirty bushles per acre. It requires a certain amount of labor to grow a crop of corn, whether the yield be small or large. It is therefore cheaper to grow a large crop than a small one, and this can be effected with good cultivation and the use of fertilizers.

Let Us Spray.

Last spring a farmer was obliged to spray to kill canker worms. He had large orchards of the standard varieties of apple trees. He had not much faith in spraying except to accomplish a special purpose, as in the present case, and he had declared that it did not pay, was not necessary; that he had been on the farm for thirty years and did not need spraying, having good crops of apples all the time.

But he must spray now to kill canker worms, and he rigged a barrel of Paris green and a force pump on a hay wagon and gave the worms a killing dose.

This was done about the time when the blossoms were beginning to fall. He killed the canker worms, and thought no more about spraying until he harvested his apples. Then his eyes were opened to the importance of spraying. In thirty years no such fruit had been gathered in that orchard—fair, sound and large. The result was remarkable, and that farmer will spray every year.

The farmer must bear in mind that conditions have changed. Every plant has its enemy—perhaps a dozen—that are hindrances to agriculture and all kindred arts, in the shape of plant pests, which multiply with wonderful rapidity, and keep pace almost, if not quite, with all improvements for their destruction. It is said that the burglar keeps pace with the manufacturer of "burglar-proof" safes, if he does not keep a pace ahead of him. As soon as the farmer learns to destroy economically or put to flight one of the numerous plant enemies, another appears, and a new problem must be solved. It pays to spray.—*George Appleton, in Farm and Fireside.*

Pet Names Disappearing.

The "pet name" is disappearing from the face of the earth. In a large hotel recently where there were a large number of children, there were Daniels, Samuels, Marthas, and Emelines, without one "ie" in them all. The antiquated titles of the first half of the century are resurrected again as in this case, and no attempt made to soften them. Eloise, and Lelias and Mauds are likewise dying out. It will not be long, at this rate, before one can tell a body's age by the name he bears, they belong so completely to periods.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

LOCAL AFFAIRS.

Notes from the Orchards and Gardens.

Seed of ten varieties of asparagus has been sown with a view of testing, later on, the comparative merits of the varieties. The plants will be grown this year in the seed rows, and set in permanent rows next spring. It is a pity that an asparagus bed should not more often form a part of the farm garden. No other vegetable comes so early in the spring, and none can be raised with so little trouble.

If promises count for anything, strawberries will certainly be plenty here in three weeks. The College bed was never in so fine a condition nor so full of bloom. The bed was liberally watered during the recent dry weather, so that the development of the crop was not checked in the least.

The currant bushes, which for several years past have borne little or no fruit, are this year quite full. Versailles and Red Dutch seem to lead, but several other varieties have a fair amount of fruit set.

The setting of the experimental grafts has been successfully finished. Besides the main series of whole and piece root grafts, using long and short cions, there are various other combinations of branched stocks and small stocks with 6, 12, and 24-inch cions, comprising in all about eight thousand grafts.

Between four and five thousand rooted grape cutting, comprising 120 varieties, have been set the past week. With any reasonable season, the College ought to have a fine assortment of young grape vines by next year.

The various species of hawthorn, *Cratægus Oxyacantha* (English hawthorn), *C. Crus-galli*, *C. Sanguinæ*, and others are in bloom, and are decidedly handsome and much admired, if viewed from the windward side. But the perfume (?) of the flowers, which causes one instinctively to look around for a snake in an advanced stage of decomposition, is rather an objectionable feature.

The Van Houtt spirea, on all parts of the grounds, has been very beautiful this week. Every twig has its bunch of tiny white blossoms borne so closely that the whole bush is a mass of white.

Both of the bearing orchards, the one on the old College farm and the one west of the vineyard, have been sprayed with Paris green for the codling moth. An ounce of Paris green is used to twenty gallons of water. The experimental vineyard has also been sprayed but with Bordeaux mixture. The formula used this year is somewhat weaker than that used last season, being six pounds of copper sulphate and four pounds of lime to forty-four gallons of water. The copper sulphate is dissolved in water, and the lime, previously slaked, is added till the mixture gives no brown precipitate with potassium ferrocyanide. This insures against copper sulphate in the solution which might injure the foliage of the plants sprayed.

F. C. Sears.

Shop Notes.

After three years of most satisfactory and efficient service, Mr. Enos Harrold will cease to be foreman of the iron shop at the close of this term of school. Mr. Harrold has formed a partnership with F. A. Marlatt, and will take charge of the business of the Blue Valley Foundry—a business built up by Mr. A. Harrold. The loss to the College will not easily be made good, as men who can acceptably carry on the varied work of the shop, which should really require three skilled men, are not usually attracted by what the College has been able to pay. Mr. Harrold goes to his new work with our best wishes and our confidence in his success.

Among other things made by the boys in the machine shop class, there is a surface plate 8 by 12 inches which shows excellent work. The production of plane surfaces is a very interesting study. The work must be done by hand and by trying of three surfaces each with each of the other two. Only in this way can plane surfaces be produced, that is, surfaces sufficiently correct for shop use. The production of an absolutely correct plane metal surface has never yet been accomplished, and perhaps will not for years to come.

Some slats for the roll-top of a desk, being built in in the shop, were made this week. They are of different pattern from any we have observed before, and a few thoughts as to their design have presented themselves. The slats of course are fastened side by side, and must so fit each other that, whether they pass a convex, concave, or plane form they will present nothing but a wooden surface which is dust-proof. They must be so joined that their combined width will not vary in any of these positions from what it is in the others.

Some of the work turned out at the shop this week has been some new chases for the *Nationalist*. They are of Norway iron, 23x32 inches, with but one weld. Chases of this kind are not easy things to make, for, as every printer knows, they must be made strong, light, and exactly square, or "pi," and lack of register would be plentiful.

A new water-meter for the Horticultural Department was received this week, and after inspection of the various parts was tested by passing a known weight of water through it. The results were somewhat surprising and would seem to indicate that water users do sometimes pay for things they do not get. The meter seems to read too fast when the velocity of water through it is very slow.

The two new boilers for the steam-plant have been delivered. They have a nominal rating of sixty horse power each, are fifty inches in diameter, sixteen feet long, with thirty-four four-inch tubes. They are without steam domes, these being supplanted by a steam nozzle to which will be attached the steam connections. The feed connection is made by tapping through the head above the water line. From this a pipe leads to the back of the boiler and turns down, delivering the feed water at the opposite end of the boiler from where it is tapped through. By so doing the water is heated somewhat by passing through the pipe surrounded by steam and the bad effects of discharging cold water against the heated boiler plates or flues are guarded against. If in any business strict honesty is absolutely required it is in the boiler-maker's business. If both material and workmanship are not strictly honest and as represented, it places every life in the neighborhood of the boiler in danger. It is for this reason that one reads with much satisfaction the name of "Jos. Bromich" of Topeka, as maker of these boilers. The shop knows this name to stand for the best of materials and honest workmanship. There are now five boilers of this make on the College grounds, and if any more are needed "Jos. Bromich" will certainly have the preference in furnishing them.

C. R. Hutchings.

Notes from the College Farm.

The sheep were relieved of their winter coats this week. The fleece averaged ten and one-fourth pounds for the old sheep and nine pounds for the yearlings.

Wheat will be a light crop on the College farm this summer. The more or less dry weather since the March freeze has retarded the recovery very much, and now the stand is very thin and the straw short and uneven. The heading out is very irregular, commencing about a week ago, and some of the heads will not be out for a week yet. The late rain of the 9th will be a timely help. The yield of the experimental acre dropped from thirty-one bushels in 1891 to eleven bushels in 1892, and this year's outlook is but little better than that of '92.

Corn planting has been in progress this week. The experiments will include about one hundred and seventy-five one-twentieth acre plots. This is all planted by hand, which is the only way to get a uniform stand. The work moves along rapidly with the help of sixteen "P. M." boys every afternoon.

An experiment has been started to test sub-soiling for crops. Three large plats have been sub-soiled fifteen inches deep, and will be compared with plowing ten inches deep. The six plats will be cropped with corn this year, and then oats and wheat in succession and back to corn the fourth year.

Kaffir corn planted a week or even two weeks from now will do better than if planted now. The seed germinates slowly and poorly, and grows slowly while the weather is cool, and the weeds have a chance to get the start. Last year's crop was planted first on May 13th, but a heavy rain came and the weather turned cool and five per cent of the seed did not grow. It was all reseeded on June 7th, and come up in a few days and grew rapidly from the start. The seed was ripe on September 22nd. The old theory has been that the seed must be planted very early to mature before frost, but the plant matures earlier than when first introduced. The crop on the College farm last summer yielded from twenty to twenty-five bushels more to the acre than corn. This is comparing the legal weight of fifty-six pounds per bushel with a bushel of shelled corn.

F. C. Burtis.

Graduates and Former Students.

Scott Moore, student in 1892-3, made a short visit to College friends on Monday.

T. E. Lyon, '93, visited College Friday, having closed a satisfactory term of school at Garrison.

S. R. Vincent, Fourth-year, is again called to his claim in Oklahoma. He may return and graduate with his class.

C. M. Morgan, Second-year in 1892-93, visited College Friday. He has closed a successful term of school in Pottawatomie County.

Ruth Stokes, '92, took good care of the cooking and dairy classes during Mrs. Kedzie's absence last week at the Social Science Federation.

L. P. Brous, '86, for several years past draughtsman and topographical engineer at Portland, Oregon, is managing the home farm near Manhattan.

C. H. Thompson, '93, is re-appointed Instructor in Botany at Washington University, Shaw School of Botany, St. Louis, for the coming school year.

E. B. Coulson, Third-year in 1892-3, writes from Anthony, Kansas, that he will re-enter College next Fall. He also states that he has a fine claim in the "Strip," by which he is well paid for remaining out of College last year.

W. M. Town, Third-year in 1890-1, visited the Webster and Hamilton Societies Saturday evening, giving them, by request, some kind words of cheer and encouragement. Mr. Town at present is traveling agent for a coal company, with headquarters at Topeka.

Gertrude Coburn, '91, read a paper on "Manual Training for Our Girls" before the Northwestern Wisconsin Teachers' Association at Menomonie, of which the *News* says: "She emphasized the need of training in manual arts for girls, on the practical, educational and moral sides."

Ben Skinner ['91] and the boys of the school improved Arbor Dry by planting a good number of fine trees in the school-house park. Some day we will have a good grove there, and to Ben Skinner belongs the praise. He has worked faithfully and long with but little help to get the park started, and now it is to be hoped that further improvements will be made as the years go by.—*Fairview Enterprise.*

Under the caption, "A Representative Kansas Woman," the Kansas City (Kan.) *Gazette* speaks highly of Gertrude Coburn, '91, as a woman and as Principal of the Domestic Department of the Stout Manual Training School at Menomonie, Wisconsin. The article concludes: "Miss Coburn is not content with her present knowledge of the work she has so much at heart. She is progressive, and avails herself of every opportunity to broaden her sphere of usefulness and inculcate helpful ideas. She spends a good share of her vacation in those eastern cities where the manual training school has reached its highest development and appreciation, investigating and comparing the methods of the more advanced teachers, who make this work a special study. She has visited Boston, New York, Philadelphia, and Washington, with a view of obtaining a knowledge of the most advanced methods in this line of work. In order to show their appreciation of her work, and to retain Miss Coburn, the Directors of the Stout Training School have each successive year increased her salary. In fact, they recognize that the departments with which she is identified owe their completeness to the ideas she has introduced and to her methods and masterful executive ability. Miss Coburn's success in her work and her knowledge of the industrial arts have become so well known that she has been invited to lecture upon her favorite subjects at the Ottawa Chautauqua Assembly in June. Later she will address some of the more notable teachers' institutes throughout the State. Miss Coburn is a young woman of sterling qualities of mind and heart, and possesses a most winning personality. She is a born teacher and director. Her executive powers are marvelous, and to this, quite as much as to her forcible ideas, is her success due."

General Notes.

Eva Staley, Second-year, drops out of classes this week.

Mrs. Kedzie will lecture before the Riley County Teachers' Institute.

F. J. Smith, Third-year, makes a brief visit today to his home in Iwacura.

Miss Philbrook was visited the first of the week by her father from Chepstow.

Mr. and Mrs. J. N. Limbocker were among the visitors in Chapel Friday afternoon.

M. Kirkpatrick, Second-year, has gone home. He may take the examination for West Point.

The ladies of the Episcopal Church will run an excursion train to Fort Riley next Saturday.

Misses Lizzie Beckhart of Garrison and Laura Rolander of Randoph visited Chapel Thursday morning.

Mary Pfuetze and Emma Weislendanger of Randolph visited exercises yesterday afternoon with Emelia Pfuetze, first-year.

A. G. Bittman, Second-year, drops out of classes to study for a few weeks in hope—well founded—of passing the examination for West Point Cadetship.

Messrs. Sears, Burtis, and Hutchings present in interesting form the various items of interest in their respective departments, covering the ground so thoroughly that nothing "gets away."

Mrs. B. F. Nihart, whose husband was Professor of Mechanics and Engineering in this College from 1883 to 1886, died, May 3rd, at Canon City, Col., where she had gone for her health's sake. The body was taken to Herington, Kansas, for interment.

After reading the article, nobody would have considered Miss Waugh in the least egotistical had she given the title "A Good Idea," to her editorial elsewhere in this paper; for the "idea" is a good one, as all will agree. Will the Class of '94 become the originator of a "Students' Aid Society" in this College?

The annual address and the address before the literary societies, Commencement Week, are provided for. The first will be delivered by Hon. Hamlin Garland on the subject, "Present Day Reform," Tuesday evening, June 12th. Prof. Kellerman will address the societies on Monday evening, June 11th. The Commencement Week program will be published soon.

The Fifth division of the Third-year Class appeared in public yesterday with the following orations: "Is New York More Civilized Than Kansas?" (Declamation) W. E. Thackrey; "The Mediocre Man," M. A. Limbocker; "The Seven Sleepers of Ephesus," Kitty Smith; "An Unprejudiced View," W. H. Painter; "A General Once Forgotten," A. C. Peck; "Melancholy vs. Mirth," J. V. Patten; "A Martyred Hero," W. I. Joss; "The Happiest Hour," Etta Smith; "An Exhortation," C. W. Pape; "Trampdom," S. A. McDowell.

COLLEGE ORGANIZATIONS.

May 5th.

The Webster Society was called to order by Vice-President H. G. Pope. After roll-call, Chase Cole led in prayer. As one of the debaters was absent, the debate was postponed until later in the evening; but the time was well spent the meanwhile in a long parliamentary discussion. A. S. Britton read an essay on "Coal Mines in Operation," giving a description of a mine with which he had been connected. M. H. Johnson's declamation on "Humanity" was well rendered. The Webster "Reporter" was next read by B. F. S. Royer. It was well edited, and was one of the best papers we have had this year. During the early part of the evening a number of ex-Websters came in and were called upon to speak. Messrs. Dickens, Sears, and Town responded. Messrs. McIlvaine and Hulse, though ex-members of other societies, also gave us a talk. S. Dolby next gave us a declamation on "Man Overboard!" During recess, which followed, the album committee showed us two beautiful morocco-bound albums they had purchased for the Society. After recess Geo. Forsyth was called to the chair, and H. G. Pope gave us a discussion on the theme, "Is the Present Condition of the Country due to Cleveland's Administration?" He argued negatively, showing how previous bad legislation had caused the gathering of the storm which is now bursting over our land in all its fury, and that the present administration is falsely accused of being its author. But during the time the discussion was going on the chairman could see by the actions of the members that an entirely different kind of storm was brewing,and that it too would soon burst around his devoted head. This time came, and George can now testify as to his trying experience by a knowing nod of the head, and Webster acuteness on rules of order is still at high-water mark. E. R. F.

May 4th.

The Alpha Beta Society was called to order at the usual time by President Kimball. Devotion by Inez Palmer. An essay, "The Queen of Queens, Elizabeth," was read by Jennie R. Smith. In it, she pictured the events leading to this reign, and its great influence upon civilization. The essay was carefully prepared, and much enjoyed by the Society. "The Man at the Ball," a story of courage and self-possession, was well-read by Mary Paddleford. A trio, Messrs. Harling, Ridenour, and Fryhofer, G. L. Christensen, committee, gave an impromptu song, which was much appreciated. W. H. Phipps read a very excellent lecture on the subject, "The Last Sleep of Helen Hunt Jackson." He pictured a solitary pilgrimage to her last resting-place, and vividly portrayed the wondrous grandeur amid which this gifted woman sleeps. Sarah Evans was received into membership. The question, "Will the new course of lectures on political economy do more good than the old regime of Professor's lectures?" was argued affirmatively by Sarah E. Cottrell and Lulu Jackson, R. W. Rader and W. A. McCullough presenting the negative. The affirmative showed the benefits of political economy as a study; but a small per cent of the students receive this benefit in course, and it is to supply this lack that this new course is provided; many will be aroused to an active interest in the great economical problems; the new course will be a connected, tangible source of knowledge. The negative said that the Professors would thus lose one means of reaching the students; they cited the effect of the last lecture in chapel, which will be a means of encouragement when we remember that the President of this College worked and played, lived and grew, amid such surroundings as our own; the science of political economy is ably taught by one of the educators of the day, in this institution, and the course of lectures would give but a disconnected view of the subject; they also cited the lectures of Professors Mayo, Brown, and Mason and Miss Harper. The decision was in the affirmative. The Gleaner was presented by Kitty M. Smith. Motto, "Some are born editors, some achieve editorship, and some have editorship thrust upon them." The issue was a very good one, some of the articles being, "Learning to Write," "Ionian Exhibition," "A Dream at the Websters Saturday Night" (poem). Music by Misses Paddleford and Secrest, "The Lone Starry Hours." Upon request, Messrs. Lyon and McIlvaine. visiting members, made short addresses which were listened to with interest. L. H. W.

May 5th.

The Hamiltons was called to order by President Scheel. After roll-call E. C. Joss led in devotion. The program opened by an essay written by C. M. Brobst upon the "Indian Scare" which happened in 1879. He told how the cowardice of one man put to flight nearly all the people in two or three Counties. The debate upon the question, "Resolved, that the President of the United States should be elected by the popular vote," was argued affirmatively by E. C. Joss and O. E. Farrar. Joss showed in a few well selected references that under the present system very often the minority elected the President. He thought the "Michigan plan," which was to elect the electors by districts the same as Congressmen, would be much better than the present way. C. D. Adams and A. E. Yeager, on the negative, stated that the popular-vote plan was considered at the adoption of the constitution, and in fact one-seventh of the time of the convention was taken up in considering this question of election. Adams further argued that the popular-vote system would not be practical until all the States had the same laws in regard to voting. The Society, in judging the debate, decided in favor of the affirmative. S. H. Robbins delivered a very interesting declamation, entitled "The Boys." A. C. Smith's discussion upon "The movement of the unemployed" showed that he had paid strict attention to the current events. He gave a brief sketch of Coxey's character, and said that his followers were, as a rule, a shiftless, lazy set. After recess C. S. Marty read a very amusing selection about "The Watch that Needed Cleaning." Mr. Norris with his harp, and Frowe at the piano, furnished the Society with some excellent music. Mr. I. Jones presented a very interesting edition of the Recorder. Some of the pieces were "Another Dream," "Prejudice," "An Experience in Defending a House against May-Basket Hangers." There being nothing of importance under unfinished and new business, we listened to Critic's report, after which the Society moved to return to the head of extemporaneous speaking. Under this head Messrs. Town and Hulse, former students, gave us a few very-encouraging words, which I am sure each one will remember. F. A. D.

May 4th.

Shortly after Chapel exercises President Frisbie called the Ionians to order. After uniting in singing, the Society was led in devotion by Mary Lyman. Gertie Lyman was installed as Marshal under the head Installation of Officers. The program opened by the debate, "Resolved, that dress adds more to a woman's attractiveness than good looks." It was argued affirmatively by Kate Pierce and Gertie Lyman; negatively by Mary Lyman and Minnie Spohr. The affirmative argued that the principal reason why city girls are more attractive than country girls was that they understood the art of dressing better. That no matter how pretty the face might be, if it did not have a dress showing a good character, its attractiveness was lost, and that this was a dress which every one was capable of adding to the homeliest of faces. The negative argued that dress was an artificial beauty, while good looks were an unsought-for gift; that however nice the dress might be if the face lacked beauty the attractiveness of the person was soon lost. Beauty of face lasts forever, and may be cultivated by the leading of pure and simple lives, while dress soon fades, and its attractiveness, instead of increasing, grows dull. The judges, Misses Hartley, Norton, and Rice decided unamously in favor of the negative. Mary Lyman favored the Society with two of her pleasing solos. Edith Lantz read the annual edition of the Oracle, the virtues of which need not here be enumerated. Rena Helder's solo closed the program at rather a late hour. M. E. S.

KANSAS EDUCATIONAL NOTES.

BY PROF. J. D. WALTERS.

State Superintendent Gaines is issuing a new edition of the "Course of Study for Normal Institutes."

The Marysville and Blue Rapids schools will close this week. The former will graduate a class of six and the latter a class of seven.

The High School of Jewell City held its Eighth Annual Commencement on Friday, May 4th, at 8 o'clock. The class number eight,—seven young women and one young man.

If your teacher has given good satisfaction this year, try the same one for next year. Of course you have no right to contract with a teacher before the annual meeting, but there may be a mutual understanding between the patrons of the district and the teacher.

President M. E. Phillips of Winfield College, we are informed, accepted the position of president of a college in Los Angeles, California at a salary of $3500. If the information is correct, Kansas will lose one of her best educators, and Winfield College will sustain a loss hard to repair.

The Abilene *School and Home* makes the following suggestion to school boards: "Some member of the Board should be made librarian during vacation in districts having school libraries, and should take the books to his home and give them out to the children during the summer, seeing to it, however, that no book is kept out longer than two weeks."

It must be gratifying experience for the Kansas State University to have the Chicago Society for University Extension send for L. I. Blake and ask him to come to Chicago and deliver a series of lectures upon electricity. It is a merited recognition of Prof. Blake's worth and well known ability that cannot but be pleasant for him to remember.—*Kansas City Star.*

They are having lots of trouble at Winfield College. Last week the papers brought the news that a window to the President's office of the College had been broken open and an attempt made to set fire to the building. The library and valuable papers were almost totally destroyed. President Phillips is offering a reward of fifty dollars for the arrest and conviction of the guilty party or parties.

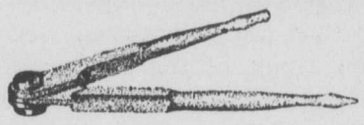
Many farmers imagine that any advice about neatness of appearance of the farm is only mockery when profits are so small that the rub is to keep even with the world; but me to emphasize what the doctor said neatness of the lawn and roadside, as this really costs little adds much to the pleasure of the home, says a terse writer in the Country Gentleman. A well-clipped lawn, a few shade trees and shrubberry ,and a few pretty flowers go a long way to redeem any farm-home from plainness or downright ugliness. In my section each farmer believes that it is his duty to care for his own animals, and all unneeded roadside fences are abandoned. We do not boast of fine surroundings in our township, but well-mown roadsides, clipped lawns, and shade trees on the lawn help much to make the homes appear desirable either to the owners or to would-be purchasers.

The following extract from the *Educational Advance* meets our views on the matter of recommendations: "Do not ask the Superintendent to recommend you. It is unjust to other teachers. If the school board comes to the office seeking a teacher, we will then recommend the one best suited to that particular district. But say two teachers apply for a school—one has a written recommendation from the Superintendent, the other has not—the latter may be best suited for the school, and just as successful a teacher as the first, but she cannot get the school. Do you not see the injustice? Young teachers often ask for a recommendation. How can a Superintendent recommend one who has never taught? Of course it pains us to refuse, but we cannot do otherwise. Letters of introduction are always mistaken for recommendations. Do not ask for them. Let us be just with the Board and each other. A young teacher presents a letter of introduction. The School Boards look at the signature, see the superintendent's name, employ the applicant. If he fails in teaching the Superintendent is blamed for it. Ask the Board to see the Superintendent personally, and then no mistakes will arise."

Shoe Business For Sale.

I will sell for cash my stock of shoes and fixtures. Stock in good shape. Trade good and well established. Best location in the city. This is a splendid business opportunity, and at the same time one can enjoy the College and school advantages of Manhattan. Address, Leslie H. Smith, Manhattan, Kansas.

A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

WM. KNOSTMAN, the Clothier, offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

WATCHES, JEWELRY.

J. Q. A. SHELDEN,"the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry and Gold Spectacles, also Musical Instruments.

E. K. SHAW, Jeweler and Optician. Watches, Jewelry, Silverware, Spectacles, Clocks, Fountain Pens, Gold Pens, etc. Repairing of watches, Clocks, Spectacles, and Jewelry done promptly and skillfully. A written guarantee given with all warranted watch work. 308 Poyntz Ave

DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

DENTIST.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

SHAVING PARLOR.

6 BATHS, $1.00 cash. 12 shaves, $1.00 cash, Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, South Second Street.

GENERAL MERCHANDISE

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

THE INDUSTRIALIST.

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College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary

NOTES UPON SOME HARDY BULBS.

BY PROF. E. A. POPENOE.

FROM the invaluable class of hardy bulbs must always come the chief beauties of the spring flower garden, and were the best annuals now available, a condition impossible through the nature of the case, one could not spare the perennial beauties that grace our gardens at this season. The taste for flowers of this class is greatly advancing, but there are many planters who are yet unacquainted with some things that prove of highest worth as ornamentals in our region. Neighbors have noted our somewhat extended planting of hardy flowers, and are asking the report of results. Flower lovers elsewhere may be interested in an account of some of the less frequently planted sorts and their behavior under conditions prevailing here. For such, the following notes upon the spring flowering bulbs are presented:—

The season that gives us results from these plants is well closed, and after several years trial we can now name as successful a sufficient number of fine things in this line to satisfy any but the bulb specialist. Of tulips, all classes and many varieties of each have been under trial. The greatest satisfaction has followed the planting of the tall border varieties, listed by dealers under the classes of parrots, bizarres, byblooms, and breeders. These are not, or have not been, sufficiently popular to warrant dealers in listing named sorts, and they are usually sold in mixture. But they will give the best results when selected sorts are planted in masses, or at least in clumps of a dozen or more bulbs of the same sort together, upon the principle of the arrangement of the hardy border. The parrots have succeeded as well as the best. A strain of the *Gesneriana* tulip, with magnificent flowers of intense crimson, separate blooms often lasting in perfect condition for a fortnight, will if so grouped, give returns in floral color to astonish one not acquainted with it. Some of the bizarres are ugly combinations of yellow and purplish brown, but the best of the class are as distinct and showy as can be desired. In these the colors, red and yellow, are clear and well contrasted. They are also long in bloom and especially available in the border. Some of the best of these are the Golden Bride of Harlem, Feu de Parade, Melancton, Narcissus, Reine Ester, Fond d' Or, and California. Byblooms are flaked and striped rose or purple on white ground and are less strikingly showy than the bizarres, but there are many among them of great beauty. Sorts that have given special satisfaction are Gare les Yenx, La Jaune, Sommer Lust, Magna Charter, and L' Incomparable.

From the class of breeders, self-colored varieties maturing into tulips of the other two classes, come many pleasing forms. The specially selected strain of self-colored sorts advertised as "Darwin" tulips have shown many good shades, and their form is as good as their color. The present high price of named sorts in this strain is practically prohibitive of their general culture, but they cannot long remain so costly.

The early drawf tulips have never commended themselves so fully to us for aught except bedding purposes. But some of the most distinct sorts will associate very properly with the above, furnishing brilliant color before the taller sorts are ready. For border planting in masses, the sorts that have given special satisfaction are Artus, Waterloo, Rex Robrorum, Overwinnaar, Gloria Solis, La Candeur, Jacht von Delft, Joost van Vondel, and Chrysolora. This list gives bright reds of different shades, red and yellow, pure white, and pure yellow colors—all affective in mass planting.

Associated with tulips in time of planting as well as in time of bloom are the daffodils and jonquils, the former especially varied and pleasing. Though these narcissi range in color only through yellow and white, yet in the shape of the flower, the season of bloom, the habit of the plant, and the combinations of the colors, the sorts vary so considerably that a number of sorts must be selected to give the different phases of beauty possible to the genus. Of the narcissus, as in the tulips, the best sorts show best when grown grouped each to itself. Through the trial of an extended and varied assortment, the following named daffodils have come with credit to themselves and with great satisfaction to their beholders: Sir Watkin, Stella Lorenzo, Golden Spur, Ard Righ, Golden Plover, Henry Irving, Tellamorius, Trumpet Maximus, Trumpet Major, and of the bicolored sorts, Empress, Horsfieldi, and Irish Princeps. If double flowered varieties are desired, plant Golden Phœnix, Silver Phœnix, and Von Sion. Pure white, sweet-scented narcissi are well represented by the Poet's narcissus, the *pœticus ornatus* and the *biflorus* varieties, all of which have done well with us. Once established and properly cared for, most of the above will improve and multiply year by year, though needing occasional resetting. The greatest drawback to their successful culture is found in the heat and drought of our early summer, preventing the proper maturity of their bulbs. Under such circumstances the plantation soon shows the effect in a diminution of bloom, and the consequent need of replanting with a fresh supply. But with the opportunity of irrigation when the bulbs are growing, they maintain their original habit of profuse blooming, until by their multiplication they show the need of being lifted, sorted, and replanted.

Other spring bulbs succeeding here are the snowdrops, of which Elwe's Giant is the best, the Chionodoxa, the Puschkinia, Seilla Amvena, and the grape hyacinths. These are all dainty small things suited for nooks where early spring beauties are most in keeping.

Dutch hyacinths are not to be rated as hardy bulbs in this region unless they are given proper soil, abundant moisture, and suitable protection. Outdoor plantings of this bulb have sometimes turned out as well as could be desired, but as a rule cold-frame treatment is demanded, the uncertainty of our often open winter probably being the cause of their frequent failure.

TARIFF HISTORY TO 1861. I.

BY PROF. FRANCIS H. WHITE.

SINCE the commencement of our government no subject has so engaged political attention as the tariff. Slavery, though it aroused more heated controversy, and culminated in the greatest war the world has ever seen, was under active political discussion rather less than half a century. But the question of levying duties on imports antedates the Constitution and is still an all-absorbing theme.

So interwoven is this topic with all the events of the past, if it were eliminated, political history would be like "the play of Hamlet with Hamlet left out." Hardly a noted statesman can be named whose reputation does not rest in part at least upon his attitude toward this question—witness Hamilton, Crawford, Clay, Calhoun, Jackson, Webster, and others. It has dug the political grave of many a promising politician, and given place and power to some who otherwise might have been unnoticed.

What fierce battles have been fought over the schedules of rival tariffs! What wars of words to prove this duty too high or that too low! How great has been the joy or sorrow of manufacturers and producers as the rates that affected their interests went up or down!

Intense as the feeling in regard to the tariff under discussion frequently shows itself to be, there is no topic that arouses less interest when viewed retrospectively. Of course if resistance to it assumes the form of "nullification," or forcible resistance, a different and more striking element is added. Ordinarily the long list of articles, the "dry as dust" schedules, the interminable discussions, fill one with inexpressible weariness.

Many people will not work their way through a history of the tariff, nor even a long article on the subject. Yet it is worth while to know something of the changes that our system of duties has undergone, even though we do not master the causes and effects of the changes. Both are so complex it would be difficult, perhaps impossible, to discover them all.

From several sources, principally "Taussig's Tariff History" and "Ford's Tariffs of the United States," the writer has made a summary which presents, as it were, a bird's eye view of our tariff history.

In 1789 the first tariff act was passed. The preamble avows the purposes to be the raising of revenue and "the encouragement and protection of manufactures," and this is the only act in the long series that distinctly announces the purpose quoted. The protection was very mild, however, for the general level of duties was only about five per cent, though on some articles of luxury and others like cordage, iron, and glass manufacturers, higher rates were charged.

The policy of a tariff primarily for revenue, but with moderate protective features, continued until 1805. Then commenced the commercial restrictions—the prohibiting of the importation of British manufactures, the "Embargo Act," the doubling of the tariff duties, and the stoppage of imports during

the war of 1812, that so greatly encouraged American manufactures.

When the war ended the country was at once flooded with goods that had been awaiting the cessation of hostilities. This competition, however, was more than our manufacturers could stand, and they earnestly begged for relief. The act of 1816 contained some clear protective features and the duties averaged about twenty per cent, though the reason given for the increase was the heavy war debt.

In 1824 important changes were made: increased duties were laid on iron, lead, wool, and other articles. The Western and Middle States, with Rhode Island and Connecticut, voted for it; the South, Massachusetts, and the other New England States against it. The average rate of duties was thirty-seven per cent.

But protective sentiment was increasing, especially in New England, whose interests were rapidly changing from commercial to manufacturing. The tariff of 1828, however, though decidedly protective, was satisfactory to but one section—the West. The duty on wool was particularly obnoxious to New England and though a number of their representatives and senators voted for the measure, it was clear that political and not economic considerations influenced their action.

So great was the outcry against this "tariff of abominations" that in 1832 a bill was passed that removed many of the objectionable features. Still, however, the South and especially South Carolina remained irreconciled, for the duties were so laid as to be protective and the policy apparently was made permanent.

"Nullification" by South Carolina followed, and at last President Jackson and the "Compromise Tariff" of 1833 allayed the excitement. This act provided that all rates of the 1832 tariff that exceeded twenty per cent should be reduced to that amount by July 1st, 1842. After 1842, therefore, there was to be a uniform twenty per cent rate. For only two months was this rate maintained, and then, in 1842, the Whigs being in power, another and a decidedly protective measure went into force.

When the Democrats obtained control of the government in 1846 a tariff act was passed that is usually spoken of as a free-trade measure. Strictly speaking, it is a modified protective tariff. Tea and coffee were admitted free, but various manufactures paid a duty of thirty per cent. The average rate of duties was twenty-five per cent.

Not till 1857 was there a further reduction of the tariff, and then the decrease in the rates was made on the plea that the revenue was excessive. The important protected articles had to submit to a reduction to twenty-four per cent, while the average rate of duties was reduced of twenty per cent, and certain raw materials were admitted free of duty. This act remained in force until 1861, but the revenue received under it was never satisfactory.

Training Boys To Be Farmers.

We are sometimes told that a boy's tastes should be his guide in the choice of a calling, that Nature usually implants a taste, and that parents must be careful not to violate the boy's "natural bent," or he may be ruined. The choice varies so much that the natural bent is held to be all important.

And so it is; but—there's a "but" in a great many wise sayings—there are other things to remember in bringing up children. The so-called "natural bent" is often a thing of accidents and circumstances, and it is the business of wise parents to control the circumstances so that the child shall have a taste for some creditable occupation when the time comes to choose. When no pains are taken to influence a boy, he may have no taste for any sort of honest work, and then what is to be done? This is often the case with rich men's sons brought up to idleness and with plenty of money to spend. This is their "natural bent" because their training, or the lack of it, spoiled them. And so it often is when the natural bent of a farm boy sends him away from the farm at manhood. He might have had a taste for it and loved it had the parents been blessed with sense enough to develop and guide and control his tastes.

How can it be done? By wise action in early childhood. Then there are no prejudices, no settled tastes to combat. The child is much like putty in the parent's hand, to be shaped at will. Interest him in such matters of farm life as he can be made to understand. Every farm has poultry and young animals, and most children have a "bent" for them. Use this bent and interest them. Show them how they must be treated, and give them chickens and animals to care for as soon as they can be trusted. Do the same as to flowers, shrubs, vegetables, and trees. The growth of a tall plant in a season, as corn, for instance, from a little seed buried in the soil, is a wonder to a child, and if carefully explained—as far as it can be explained—will interest any intelligent child, and if the story be attributed (as it should be) to the Great First Cause will constitute a lesson to be remembered for life. Do any and every thing to make them love the farm and farm life.

That the farm has genuine attractions, is seen in the case of many boys who leave it at manhood, get rich in business or professional life, and then buy and cultivate a farm on which to end their days. The farm they love for its own sake, but they rarely feel that way as to business. There is little in most business callings that, in and of themselves, appeals to a man's love or attach him to it a moment longer than it pays. Much of mercantile life is physical drudgery, such as packing and unpacking goods, pulling them down to show customers, and piling up again. Personal contact with customers is often wearisome in its revelations of character, sickens one of life, and yet demands unceasing energy for success. Mechanical trades have even more drudgery, and sometimes more dirt, unrelieved by the farmer's leisure and healthy contact with nature. Even "high art" is full of drudgery, and only a few artists win wealth or fame. Long years of self-denial and toil precede the rewards of professional and political life, and the rewards themselves are quite as uncertain as a lottery. Even with success many other elements enter as sometimes to pall and disgust.

The farmer has pleasures at command which cost the rich tens of thousands. They are country life with its belongings—fresh air, flowers, vegetables, shade and fruit trees, beautiful lawns if he will, healthy and congenial work, refreshing sleep, with many opportunities for rest and recreation. He can have a "country seat" through taste and labor—excepting only the costly buildings, which do not form the main charm. That is in the grounds. Don't crowd the modest dwelling up to the public road like a gate-keeper's lodge, but set it back, usually far back, and hide it and other buildings more or less behind trees, hedges, and shrubbery. It is poor taste that impels so many to put a dwelling close to the wheel rut, where dust and mud predominate. A broad velvety lawn, shade trees well pruned, singly and in groups, flowers in sunny open spaces, stately evergreens here and there branching down to the earth, with well-kept walks and driveways winding from the highway to the dwelling—these are some of the attainable features that should mark every farmer's home. The slovenly barrenness that make so many farm homes unattractive, and sometimes repulsive, has no good excuse for its being. Its origin is traceable to a neglected childhood and a false estimate of what goes to make a happy and contented home.—*Philip Snyder, in New York Tribune.*

The Average Farmer.

However energetic or intelligent the averge farmer may be, he labors under difficulties not easily overcome. If these are intended to put him on his mettle, compelling him to do his best, he must accept them as blessings and allow them to fulfill their mission. That they are real discouragements, however, no one can deny. That they make necessary an outlay of time and strength which he can ill afford to lose is an undeniable fact. But if, as is no doubt the case, these discouragements weed out the half-hearted, leaving only those who are determined to make a success of whatever they undertake, therby placing the business of farming upon a higher stand, the world is certainly benefited.

The average farmer lacks education. The circumstances of his youth were such that only its rudiments were obtainable; or, as is more likely to be the case, the youngster had so many more important matters to attend to that study was out of the question. No amount of coaxing or flogging on the part of parents or teachers could induce him to see the value of that for which he would now be willing to exchange every foot of land he owns. Little time has he now for study, and, what is more, he finds he cannot master the contents of a text-book as readily as he might have done in boyhood. What then? Must he remain in ignorance? By no means. Let a man of energy once get his eyes open to his needs and it will not take him long to find some way of supplying them. He will not, perhaps, set himself a lesson of so many pages, but with efficiency he will set to work in the best way to accomplish his ends.

Suppose dairying is his chief industry. He will read books and papers devoted to that subject, and in the periodicals given to general agriculture his eye will naturally fall upon such articles as relate to it. He will attend lectures and farmers' institutes, he will talk with those engaged in the same business, and from all will gain new ideas, which he will not be slow to put in practice. Knowledge is such a wheel within a wheel affair that he cannot become well informed on one subject without gaining more or less information on many; so the very means by which he gets his living will become to him an education.

Dame Nature stands with open book in hand ready to impart knowledge to all who will listen. In fact, none but the wilfully blind can long remain in ignorance. Brought, as the farmer is, into direct and continual intercourse with her laws, which are of themselves an education, the average farmer need not long remain one. The accidents or even mistakes of early life may in a great measure be overcome, and he who will may rise above the average and become one of those whom the world delights to honor.—*A. F. Armeress in New York Tribune.*

The Boy on the Farm.

Inasmuch as the boy crop, always excepting the the girl crop, is the best crop on the farm, and inasmuch as these two crops are of greater value than all the other crops that are grown, it is of the utmost importance that they should receive proper care and attention. We speak at present only of the boy crop, leaving it to the editor of the woman's department to tell how the girl crop should be raised to the best advantage. We always had compassion for the boy on the farm, and particularly the oldest, and for him we speak from experience. It is supposed that the boy never gets tired, that it is his place to fetch and and carry, do all the errands and eat at the last table when company is present. Parents forget, sometimes, that after all, he is only a boy, and while he may not get tired playing ball or flying kites or catching squirrels, or anything else that has an element of fun in it, he often does get very tired when these elements are wanting. We have often known old folks to get tired—awfully tired—when it is time to go to church or prayer meeting, but very sprightly when it is time to attend a political meeting, especially if there is to be a "joint discussion."

The best thing we have known to prevent a boy getting tired of doing chores or pulling weeds in the garden is to give him an interest in the results of his work. He will take a great deal more interest in feeding the pet lamb or runt pig if he has no suspicion that it will be Johnnie's pig but father's hog, Jimmie's lamb, but papa's sheep; in other words, if he knows that the proceeds will be his "very own" when they are converted into dollars.

It is a mistake to think that it is a good thing for a boy to endure unusal hardships, or to do as father was compelled to do when he was a boy. Because father had to go barefooted to the pasture in October after the cows, in the early morning when the frost was on the grass, and had to stir up a cow to warm his feet where she has lain, as we have often done, is no reason why in these days of cheap shoes and better conditions the boy should do the same. The growth of the boy in physical frame is infinitely more important than the growth of the pig, and any hardships or undue exposure which stunts his growth or impairs his health is a wrong done to him which he may forgive, in the largeness of his heart, but should never be asked to forget.

The boy should be taught to work, but the work should be proportionate to his age and strength, and whatever he is required to do should be done in the very best manner possible. Thoroughness in work is just as important as thoroughness in study, and the boy who is required to do everything that he does in the very best manner possible, has laid the foundation of a first-class man. Inasmuch as the head will be needed in all future years to guide the hand, the boy's education should never be neglected. It is a wretched waste of time to keep the boy at home from school except on wet days, on the theory that his work cannot be dispensed with. Do this and you make him a hewer of wood and drawer of water all his days. If he is not taught before he attains his majority to use his head it is not a matter of great importance whether he uses his hands or not.

The boy should be taught a code of morals of the very highest character; to hate and despise mean little things; all tricks in trades; all deceptions; to be a manly boy, and thus lay the foundations for a manly man. It might be neccesary for the old folks to reform a little in this respect, as it will be useless to attempt to teach the boy manly ways and a high code of morals unless he has before him in the home an example. The excuse that "father did it" will not atone for infractions of the laws of governing honest, upright dealings. Above all things, teach the boy to despise indecency and vulgarity, and if there be a hired hand on the farm that teaches by example or precept anything that the boy's mother would be sorry to hear, fire that hand. No man can afford to keep a hand on the place that pollutes the mind and depraves the morals of his boy. When a boy arrives at the age of eighteen or nineteen years with a pure mind, trained to think, to do every thing in the best way possible, and with a love for pure reading, his parents need not trouble themselves about his going far wrong in the world after he leaves the parental roof. Vice will have no attractions for him, and evil associates will find nothing to lay hold of in that kind of a boy.—*Live-Stock Indicator.*

The Kind of Horse Wanted.

Says a far seeing breeder: "There is one thing which breeders are neglecting, and that is the breeding and training of road horses. There is a wonderful demand for this class of horses, and nowhere do you see it more than right here in New York city. You drive a nice, toppy, stylish team of roadsters into a sale-ring in this city; a team that can road handily at a 3:00 gait without any bad acting, and see how quick the bidding becomes spirited. A half dozen men will want the team, and they will sell all the better if they are geldings. Such a team will sell at any of the prominent sale marts, under the hammer, for from $1,000 to $1,500, and if they are a particularly attractive pair they will bring more. Too much attention is paid to making race horses rather than road horses. I do not want to be misunderstood in this matter. I know that the earning capacity of a winning race-horse is being increased every year, and that such a horse is good property, but many a breeder has become bankrupt attempting to get that kind of a horse, while he might have at least kept himself on top of the water had he worked as hard to secure the ideal roadster. For this latter animal there always has been and always will be a demand. The most essential characteristics of a road horse have been forgotten or overlooked in the mad scramble and haste to secure a race horse. If you will go with me on a trip through the trotting-horse regions, and look only for a gentlemen's ideal roadster I will gaurantee that you will be surprised at the result, and you will travel many miles and visit a great many farms before you will be able to match up a team of that kind."

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

CLASS ENTERTAINMENTS.

The Fourth-Year Party.

At an early hour, the Class found its way to the homelike home of Pres. Fairchild. The early part of the evening was spent in various ways, of which the most exciting was a potato race. Four potatoes were placed a one side of the room, and a dish at the other. The one who could carry them across on a small spoon in twenty-five seconds was considered an object of envy. There were three such fortunate ones—Miss Clark and Messrs. Taylor and Donaven.

Each lady was presented with a card on which was written the name of a county, and the gentlemen were given the corresponding county seats. The perplexity which followed the trying to find the right county seat for the county showed plainly that the majority of the class had "passed" geography long ago. When, however, with the help of his neighbor's memory of that branch, each county seat had found his county, a delightful lunch was served.

A short program had been prepared, which was next in order. This consisted of a solo by E. L. Frowe, solo by Mary Lyman, and a duet by Misses Lyman and Helder. There were urgent entreaties that Pres. Fairchild sing his song. The President seemed reluctant, but finding there was really no escape, sat down and sung Johnnie Smoker, and on receiving a hearty encore, responded with Katie Lee and Willie Gray. One feature of the evening which must not be overlooked was a collection of photographs of different members of the Class and Faculty. These were numbered and the guests invited to identify them. When the numbers were read and the names belonging to them given, much amusement was caused by the fact that a number had mistaken Capt. Cavenaugh for Mrs. Kedzie, and Prof. White's baby picture for that of Mrs. White.

Promptly at half-past ten, the guests took their leave, feeling sure that never before had a class been so royally entertained. P. C. T.

What The Third-Years Did.

The Class of '95 was never known to be quite so merry as last Friday evening, when, two and two, in wagonettes and surreys, they drove out into the country responding to a class party invitation given by our worthy President, Miss Miriam Swingle. The evening being cool and bright, the ride was very enjoyable. At 8:30 the guests had all arrived, and being cordially greeted by the hostess, mirth and good spirit prevailed. Social chats and class discussions were indulged in until time for the program. Two instrumentals were given by the guitar quartet, Misses Crump, Fryhofer, Thompson, and Mr. Conrad. In the address of the evening Mr. E. H. Freeman wandered from the earth to the moon and back, and back to the moon again. With a proper seasoning of wit and good humor, he talked of the Class, to the Class, and our mutual ties were unconsciously drawn closer when reminded by the speaker that in all probability this would be the last time we would meet as Juniors in the Kansas Agricultural College.

The address was followed by a vocal trio with guitar accompaniment, "Sweet Afton Waters." The Invective given by Miss Ada Rice had so many ugly things in it that, if we did not know the speaker so well, we would have dubbed her an inveterate grumbler.

A male quartet by Messrs. Patten, Joss, Fryhofer, and Hayes was well received.

Among the extemporaneous toasts, L. W. Hayes spoke of "What we will do when we are Fourth-years," Miss Pierce "What we should have done as Third-years," and J. V. Patten gave a bright and ready toast "Our President," who by choice takes the course in five years, hence will not graduate with the class which has shown its esteem by making her its presiding officer. The response was full of expressions of appreciation for the high honors received. The speaker knew she would always think the Class of '95 the best class that ever graduated; her closest friendships were here formed, and her best and foremost wishes are for the success and prosperity of every member.

After another piece of music, partners were secured for refreshments. This was done after the manner of the modern cake walk, the boys alone forming the circle. But in this case, instead of a sweet spicy cake, the winner got for his prize the girl in the center, and marching off as partners, another damsel was put in the ring.

After refreshments dainty and abundant, the ghost parade came off. In this, Mr. B. W. Conrad received the first prize, a box of candy. and Mr. A. C. Peck the booby prize, an automatic tin alligator.

When the "time for going home" arrived, all felt the evening could not have been more pleasantly spent. Thanking the kind hostess sincerely, the united feelings were, that pleasant memories will everlinger 'round this merry evening gathering. G. W. F.

The Second-Year Frolic.

On Friday evening, in accordance with the cordial invation given by Miss Edith Lantz, the Class of '96 assembled at her home and were royally entertained. Soon after eight the members of the Class began to gather on the lawn, beautifully decorated with Japanese lanterns and a roaring bon-fire. Here droll stories were recited, and light laughter told that the cares of the class-room had been thrown aside. The early part of the evening was spent in games on the lawn, but later the Class retired to the parlors, where delicious refreshments were served, after which each spent an hour writing his name on the souvenir napkins. At a late hour all expressed their pleasure to Prof. and Mrs. Lantz, and went home feeling proud that Edith is their Classmate. M. H.

SHOP NOTES.

The shop has been asked to design a cheap gate, to be used at the reservoir for irrigation experiments at Garden City.

In the foundry the work has been mostly for use in the shop. However, the sash weights for the new building have been finished, which is the greatest amount of outside work than has been done.

Among other things made by the boys in the shop are two or three oak and ash tables, which are quite ornamental as well as useful. They are of different pattern from anything heretofore made, and show good workmanship.

There are also some unique wall sockets, made in the form of one-half of a boat, fastened to the front of a plain-board back, which hangs against the wall. To lay out the various curves of the outside is a part of the work given here, and illustrates some very pretty problems in geometry.

The old boilers have been removed from beneath the Chapel floor to the new boiler house, where they will be set with the new ones received from "Jos. Bromich" last week. Some repairs will have to be made on them, however before setting; but even with this, they cannot last long, and an appropriation will have to be asked of the next Legislature to replace them with new ones.

The season of bug catching has made itself known to the shop in the demand for bug boxes. There are about seventy boxes on hand now, which are about all that will be needed this spring. Part of the usual demand was made last fall by having a class in Entomology at that time. The boxes are made by the shop only as an accommodation to the students, and are furnished at actual cost.

The shop has just finished a fifteen-inch shaper, which will take its place along with the other machinery. The rough castings were bought from the Hendey Machine Company, while the work of fitting and finishing has been done entirely by the shop. It has been set in place and only awaits the coming of a new line shaft pulley to drive it. By this machine something like $300 is added to the value of the shop equipment.

A curious effect of light is noticed in the Mechanical office. The ink used for contour lines in the large map hanging on the wall has so faded that it is difficult to trace them at all. They must be renewed shortly, or they will have entirely disappeared. This map is one of the College farm, and locates not only the buildings and drives, but the lines of water, sewer, gas, and drain pipes. By reference to it, any repairs that might be necessary are greatly facilitated by showing just where digging would be necessary to lay bare any pipe on the farm, no matter if the ground be covered with snow. Also, if the ground be frozen, the least possible amount of digging can be calculated upon, as no "hunting for pipes" is necessary. C. R. HUTCHINGS.

GENERAL LOCAL NOTES.

Miss Maud Waugh visited her sister at College yesterday afternoon.

Mrs. I. D. Newell, of Manhattan, attended morning exercises, Tuesday.

F. W. Ames, Fourth-year, had a short visit from his father, Tuesday afternoon.

Miss Walker, of St. George, visited College Friday with her cousin, Mabel Gillespie.

Prof. Failyer occupied the hour of public exercises yesterday afternoon with a sketch of that great scientist, Prof. Tyndall.

Rev. Geo. Adams, of Rochester, Michigan, visited Chapel Tuesday morning with his niece, Gertie Havens, in Second-year classes.

Rev. Geo. F. Hall and wife of Decatur, Illinois, visited Chapel and looked over the College and grounds, in company with Mary Lyman.

"Civilization's Inferno," placed in the College Library this week by favor of its author, B. F. Flower, is an earnest plea for an uplifting of lowest city life which ought to be heeded.

GRADUATES AND FORMER STUDENTS.

A. C. Kimball, '93, visited friends at the College Friday.

Miss Finley, a former student, visited College Thursday.

E. W. Curtis, Third-year in 1889-90, is manager of a creamery at Lone Tree, Iowa.

Mary Pritner of Riley, student last year, was a visitor at Chapel yesterday afternoon.

A. D. Rice, '92, visited College Friday. He has just closed a successful term of school at Keats.

E. C. Pfuetze, '90, has resigned as Superintendent of Manhattan waterworks on account of ill health.

F. M. Linscott, '91, and Susie Hall-Linscott, '93, are the proud possessors of a son, born April 17th.

D. G. Fairchild, '88, is spending a few months at the Royal Botanical Gardens of Breslau, Germany, under Ferdinand Pax.

C. H. Paul, Second-year in 1892-3, who is at present attending the State University, visited Chapel and College friends Monday morning.

C. L. Marlatt, '84, writes of "The Currant Stem Girdler" in No. 4, Vol. VI., of *Insect Life*, published by the United States Department of Agriculture.

C. F. Pfuetze, '93, orders the INDUSTRIALIST sent to Burlington, Kansas. Mr. Pfuetze has accepted the position of the waterworks engineer at that place.

Mayme Houghton, '91, and Lillian St. John, '91, enjoy the distinction of being chosen as two of the four teachers of the "model school" in the Riley County Institute.

Revised Course of Study.

[Numerals denote number of class hours per week. When no work outside of class is required, italics are used.]

FIRST YEAR.

Fall Term..... Algebra, 5.
English Analysis, 5.
14 weeks. Botany, 5.
Free-hand Drawing, 3.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 4.

Winter Term..... Algebra, 5.
English Composition, 5.
12 weeks. Bookkeeping, one-half term, 5. Commercial Law, 1.
Geomtrical Drawing, one-half term, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 3.

Spring Term..... Algebra, 5.
English Structure, 5.
10 weeks. Elementary Physics, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 5.

SECOND YEAR.

Fall Term..... Geometry, 5.
Horticulture, 5.
14 weeks. Inorganic Chemistry, 5. *Laboratory work*, 2.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 4.

Winter Term..... Geometry, one-half term, 5.
Projection Drawing, one-half term, 5.
12 weeks Agriculture, for young men, 5.
Household Economy, for young women, 5.
Organic Chemistry, one-half term, 5.
Mineralogy, one-half term, 5. *Laboratory work*, 5.
Military Science, one-half term, 2.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 3.

Spring Term..... Descriptive Geometry, 5.
Entomology, 5.
10 weeks. Analytical Chemistry, 10.
Military Science, 2.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 5.

THIRD YEAR.

Fall Term .... Trigonometry and Surveying, 5. Surveying Practice, 2.
14 weeks. General History, 5.
Anatomy and Physiology, 10 weeks, 5.
Chemistry of Foods, 4 weeks, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Winter Term..... Mechanics, 5.
Civics, 5.
12 weeks Zoölogy, 5.
Map Drawing, about 30 hours a term.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Spring Term..... Geology, 5.
Rhetoric, 5.
10 weeks. Agricultural Chemistry, 5.
Perspective and *Sketching*, 4.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

FOURTH YEAR.

Fall Term..... Physics and Meteorology, 5.
English Literature, 5.
14 weeks. Agriculture, for young men, 5.
Hygiene, for young women, 5.

Object Drawing, 4.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Winter Term..... Physics, one-half term, 5.
History of Industry and Science, one-half term, 5.

12 weeks Psychology, 5.
Botany, 5.
Veterinary Science, for young men, 5.
Floriculture, for young women, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Spring Term..... Political Economy, 5.
Logic, 5.

10 weeks Engineering, for young men, 5.
Literature, for young women, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Knows a Good Thing When He Sees It.

County Superintendent Scott writes to the Blue Rapids *Times* as follows:—

"I receive each week a paper which should be more generally read in our county than it is. It is the INDUSTRIALIST, which is edited by the Faculty and students of our State Agricultural College. It is published at fifty cents a year, and is devoted principally to the interests of the farm, garden, orchard, and home. It seems to me if this and similar papers were more generally read by our young men who live in the country their interest in their work would be greatly increased, and this, with the knowledge gained, would make them more successful and better contented farmers. Too much time is spent by young people in reading that which goes by the name of politics, but which consists largely of abuse and misrepresentation of persons, measures, and parties. It would be better for them to read that which would throw more light upon their work. A good agricultural paper in a farmer's home is a source of prosperity and happiness."

Improvement by Seed Selection.

No more desirable end is presented than the now demonstrated possibility of speedy and permanent improvement in the qualities of plants by selecting seeds from such as have the desired characteristics. Not only has the possibility of such improvement been fully shown, but the actual work has been entered upon at several experiment stations, and at none with greater wisdom, conscientiousness, and success than at the Kansas Agricultural College. Without here referring especially to the work in this line done by the Agricultural and Horticultural Departments of the College, attention is called to a work which was necessarily under the direction of the Chemical Department, because the qualities of the product could be determined only by chemical analysis. The illustration afforded by these experiments is, however, especially valuable because of the accuracy with which, by the methods of the chemist, the relative values of the plants under consideration are ascertained.

The experiments referred to were with sorghum cane, undertaken with a view of improving its sugar-yielding properties. The success of the experiments is such as to warrant the assertion that had the policy of the Government with reference to sugar remained the same as it was when the experiments were first undertaken, the profitable production of sugar as a staple Kansas crop would now be a reality.

But whether or not the improvement here wrought shall ever of itself become available as a source of profit in sugar-making, the demonstration of the possibility of so great and rapid improvement in any plant constitutes an object lesson of untold value, and is finding application in the treatment of other plants. The limits of possible improvement of the sorghum plant are not known, and it may be that the continuance of the efficient work which has wrought the changes shown in the table will, in the near future, produce a sugar-yielding plant of such excellence as will need no "protection" to enable it to compete with the cheapest sugar in the world.

The editor of the *Kansas Farmer* may be a "crank" on the subject of improvement by seed selection and by crossing, but he is not half so much of a crank in this respect as every intelligent farmer and horticulturist is likely to be as the work now only begun proceeds. During the six years of the experiments improvements were made amounting to 25 to 40 per cent, and there is no indication that the limits have been reached.

As noted by Profs. Failyer and Willard, the percentage of glucose in sorghum has been greatly reduced. Changes have also been wrought as to date of ripening, vigor of growth, ability to withstand drouth, height of canes, stockiness, strength to withstand winds, root development, etc.

Why should not other crops be similarly modified? Why may not the experimenters give us apples, pears, peaches, plums, and cherries whose blooming time shall be such as to escape the danger of the late frost? Why shall not our staple field crops be developed in the direction of better adaptation to the vicissitudes of climate as well as of better yields and more valuable qualities?

These and many other improvements need not the special skill of the chemist to determine them, and are therefore the more readily made.—*Kansas Farmer.*

COLLEGE ORGANIZATIONS.

May 12th.

The Webster Society was called to order at 8 P. M. by Pres. Stingley. The Recording Secretary being absent at roll-call, H. G. Pope was appointed as Sec. protem, and as E. R. Farwell's hand was injured, F. E. Uhl was appointed Corresponding Secretary for the evening. Chase Cole led the Society in devotion. The leading debater on the affirmative being absent, the order was postponed, and a selection, "Pay the Printer," read by S. M. Strawn, was the first part of an interesting program. C. R. Pearson discussed the subject of "Sea Divers." "Resolved, that the National Capitol Should be Removed" was the question for debate. It was affirmed by E. H. Webster and J. B. Norton, and denied by J. V. Patten and S. B. Newell. The affirmative thought that if the Capitol was to be removed, it should be to Kansas. They said that it should be near the geographical center, that any Western State would be willing to pay the expenses of removal. They said that Eastern congressmen knew little of the West, and that if the seat of government was away from the manufacturing East, where it is convenient for corporations to influence legislation, and out here in the busy West, laws would be framed more in harmony with agricultural interests. The Capitol would also be more safe in time of war, if in the West. The negative argued that Washington possesses better claims for the Capitol than any other city possibly can. In addition to being the most beautiful city on the continent, it is given up wholly to government work; it is also in the vicinity of many Revolutionary incidents, the interest of which would be lost if the Capitol were removed. Washington is convenient to foreign powers and makes treating with them an easy matter. Distance from a large part of the country is a small matter, as travel is, in the near future, coming to so high state of perfection. The affirmative summed up the argument as follows: Many congressmen attend too little to their duties; if they were in the West this fact would more likely be impressed upon them. When the Capitol was located, it was placed near the center of the country. In a few years most of the business will be west of the Mississippi River, and the Capitol should be in the midst of it. Mr. Patten, in closing the negative, contrasted Missouri and the prairies near Ft. Riley with the beautiful location at Washington. He said that a paradise should not be placed in a wilderness, and any way legislation could be done just as well at one end of a country as in the middle. The negative won the question. After recess F. Rummel gave an interesting discussion on "Soy Beans and Cow Peas." His manner of handling the subject showed that he had made valuable investigations. The following is an abstract of the discussion: Corn should be planted between the rows in order that, if the beans fail, a crop of corn may be raised. Nitrogen passes from the beans to the corn by the law of osmosis. To prepare the beans for calf feed, mix well with bran and run through a fanning mill, being careful that no beans shake over,—feed the chaff. For older cattle, grind well with cornmeal, the more and the better the meal the better the feed. E. H. Freeman, music committee, introduced a quartette, Messrs. Patten, French, Cole, and Cutler, who sang "The Church in the Wildwood," and responded to a hearty encore with "Tarpaulin Jacket." In a discussion, E. R. Farwell followed the prairie dog through his habitations, also suggesting methods of rearing and destroying them. Unfinished and new business. Adjournment.

F. E. U.

May 11th.

As soon as was possible after the chapel exercises the Ionians were called to order by President Frisbie. The Society united in singing. Ethel Patten led in devotion. Roll-call showed but few absent. The Oracle was presented by Hilda Leicester, who had as her motto "Happiness is a perfume which you cannot pour on others without getting a few drops yourself." She was aided by the the third division. The paper was nicely read and was enjoyed much. Hope Brady delivered a declamation entitled "The Mercies of God" in a pleasing manner. Next we had congregational singing. Martha Harbord opened the discussion, "Are the times really hard? If so, is the present administration to blame?" She said the one fact that during the last winter there were so many idle, destitute men, who were willing and would have worked if they could have had any work, proved that the times were hard and that money was scarce. The sentiment of the speakers, for there were many after the question was opened to the Society, seemed to be against laying the blame on the administration; that the condition, if due to faulty laws, must be blamed to the Republicans, for they had been in power so long and their laws so numerous that the administration has not had time to destroy and replace them. Some thought that this condition had been gradually growing and had reached its crisis in this administration through no fault of the same; while others thought that hard times had been preached so much that the capitalists had held back their money from fear; that the same amount of money still existed but was not in circulation. Elsie Crump's impersonation, "Widder Bedott," was perfect and hearty was the laughter and applause. Nellie Burtner's declamation, "The ride of Jennie McNeel," was nicely delivered. Laura McKeen gave an interesting story of the "Green Mountain Boys," which closed the program.

M. E. S.

May 12th.

The Hamiltons were called to order at the usual time by R. J. Barnett. After roll-call, C. E. Pincomb led in prayer. The program opened with an essay by C. S. Evans. This was followed by an interesting declamation by Wm. Anderson. The debate upon the question, "Resolved, that the benefits derived from party government exceed its evils," was opened by R. K. Farrar. He declared that the party was a necessity in a government like ours; and also that the existence of different parties tends to hold each other in check, and thus prevent hasty and faulty legislation. He further stated that it took experienced men to keep the machinery of government in running order. F. A. Dawley, on the negative, said in Washington's and Monroe's administrations there were no parties, and the country was prosperous. After this the discontented office-seeker by his eloquence succeeded in forming a party, and it is from such that the different parties are formed, and they are fast becoming more corrupt every day. He thought that if the people had the interest of the nation at heart, instead of being each for himself, the country would have no need of parties. Owing to a little change in the program, the seconds upon the debate were not prepared, and will be carried forward one week. This is a little out of the usual order, but it was all on account of Fourth-years going to the Fort. O. Strahl's select reading about "The Elephant" was quite amusing and well read. After recess, under extemporaneous speaking the advisability of changing the order of roll-call from the first to the last part of the session was thoroughly discussed. F. E. Smith, not feeling disposed to talk upon either of these subjects, spoke of some of the shameful way some people act when they go out to hang May baskets.

F. A. D.

A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.

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DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

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THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

Historical society

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College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary

TARIFF HISTORY SINCE 1861. II.

BY PROF. FRANCIS H. WHITE.

THE financial legislation of the Civil War is remarkable both for its quantity and character. Laws concerning tariff, internal revenue, bonds, treasury notes, fairly trod upon each other's heels. The influence of this legislation is still felt—indeed, considerable of it remains in force or is the foundation of present laws. A striking example is the tariff.

The failure to obtain sufficient revenue under the tariff of 1856 was assigned as the main reason for the "Morrill Tariff" of 1861. This act was framed by the House of Representatives in the session before Lincoln's election, and consequently before anyone anticipated the great needs of the Civil War. The supporters of the measure said it was their intention to restore the rates of 1846, but as most of the duties were changed from *ad valorem* to specific, the opportunity was embraced by the Republicans, then in power, to considerably increase the protective features. Iron and wool were especially favored.

During 1862 an internal revenue act became law that imposed taxes on nearly all domestic manufactures; hence it seemed necessary to raise the tariff at least a corresponding amount. The tariff of 1862 accomplished this purpose and gave some additional protection.

Many bills increasing the duties on imports were passed during the war, but it was not until 1864 that a comprehensive measure was enacted. This, too, was called for mainly because of great necesssities of the Government, and the passage of an internal revenue act that bore heavily upon domestic manufactures. Under these conditions it was possible to secure abundant protection for almost every industry. The average rate of duty under the act of 1862 was 37.2 per cent; under this one it was 47.06 per cent.

After the war, reforms in taxation were loudly demanded, and Congress responded by abolishing with considerable rapidity a large part of our complicated and exasperating internal revenue system. By 1872 about all the taxes on domestic manufactures that might have been cited as reasons for equivalent protective duties were swept away.

Various plans for the reform and reduction of the tariff duties had been proposed, and in 1870 duties on tea, coffee, wines, sugar, molasses, and spices were lowered, and some other articles not of home production were placed on the free list. The duty on pig iron was considerably reduced. Additional protection was given to steel rails, marble, nickel, and some other articles.

In 1872 the surplus revenue was quite large, and it was decided the tariff should be reformed. The method was simple, if not scientific: a horizontal reduction of ten per cent was made in nearly all duties. Tea and coffee were admitted free; the duties on salt and coal were considerably reduced. The panic of 1873 checked the business of the country so that imports, and consequently the revenue, were greatly lessened. The result was the passage of a bill in 1875 repealing the ten per cent reduction.

A commission was appointed in 1882 to make an investigation and report what changes were desirable in the tariff. Its recommendations did not meet with favor in the House. The Senate, however, made them the basis of a bill which was attached as an amendment to an internal revenue bill of the House. When the bill emerged from the conference committee of the two houses, its original character was changed and in several respects it had become decidedly more protective than the recommendations of the tariff commission. Although on most woolens the duties were lowered, on some classes they were increased over those then in force. The same was true of certain manufactures of steel. On cotton goods, linen, steel rails, copper, and some other articles there was a decided reduction.

The next change in our tariff came with the "McKinley act" of 1890. Duties were increased on woolen and linen goods, tin and its manufactures, wheat, corn, eggs, potatoes, barley, hemp, flax, and some other articles. Raw sugar was admitted free; on refined sugar, the duty was fixed at a half a cent per pound, and a bounty of two cents per pound was given to the domestic producers of sugar. A reciprocity provision was added to the bill, but this and other features of our present law are too well known to make details necessary. The papers state that the Treasury experts have just reported to the Senate that the average rate of duties under the act of 1890 is 49.58. Averages are sometimes misleading. For example, it will be readily seen, if a number of low duties were entirely removed, the effect would be to increase the average rate of the duties that remained.

DISTRIBUTION OF KANSAS GRASSES.

BY PROF. A. S. HITCHCOCK.

THE Botanical Department wishes to obtain further data concerning the distribution of Kansas grasses, and this opportunity is taken to present to those interested in this important group of plants, the data already collected as shown by specimens in the Kansas Herbarium.

Below is given a list of our grasses with their distribution by counties. We shall be under obligations to anyone who will furnish us with additional information, especially as to the extension of the range already known. Specimens should in all cases accompany such information. Collections of grasses are easily made and preserved, and would be valuable additions to our herbarium. It is hoped that our correspondents will aid us in this work. The Scientific names are those used in the sixth edition of Gray's Manual of Botany.

Commonly cultivated and often escaped: *Phleum pratense, Dactylis glomerata, Poa pratensis.*

Introduced weeds common all over the State: *Panicum Crus-galli, P. sanguinale, Setaria glauca, S. viridis, Eragrostis major, Bromus secalinus.*

Introduced and occasionally escaped: *Sorghum halapense, Festuca pratensis.*

Native grasses common throughout the State: *Andropogon furcatus, Panicum capillare, P. virgatum, Cenchrus tribuloides, Sporobolus Cryptandrus, Spartina cynosuroides, Bouteloua recemosa, Eatonia obtusata, Hordeum jubatum, H. pratense, Elymus Ganadensis, Festuca tenella, Agropyrum glaucum, Schedonuardus Texanus.*

Tripsacum dactyloides: Miami, Butler, Greenwood, Riley, Geary, Saline, McPherson, Barber.

Chrysopogon nutans: Pottawatomie, Riley, McPherson, Stevens.

Andropogon laguroides: SW. counties to Hamilton, Ford, Saline, Harper.

A. scoparius: West to Riley, Saline, Sumner.

Paspalum laeve: Cherokee.

P. setaceum: Linn, Pottawatomie, Riley, Shawnee, Clay, Saline, Reno, Meade, Barber.

Eriochloa punctata: Montgomery, Sedgwick, Barber.

Panicum autumnale: Riley, Stafford.

P. clandestinum: Pottawatomie.

P. depauperatum: Riley.

P. dichotomum: Wyandotte, Johnson, Miami, Pottawatomie, Riley, Rooks.

P. glabrum: Riley, Seward.

P. latifolium: Wyandotte, Cherokee.

P. obtusum: Ford, Barber, Seward.

P. proliferum: West to Rooks and Reno.

P. scoparium: West to Rooks and Ford.

Leersia oryzoides: Pottawatomie, Riley, Saline.

L. Virginica: Pottawatomie, Riley, Shawnee, Saline.

Phalaris arundinacea: Pottowatomie, Labette.

P. Canariensis: Shawnee (in herb. Popenoe).

Aristida basiramea: Pottawatomie, Riley, Saline, Kingman.

A. dispersa: Clark.

A. Humboldtiana: Seward.

A. oligantha: Miami, Shawnee, Riley, Labette, Saline, Rooks, Barber, Clark.

A. purpurascens, var. minor: Riley, Ellis, Stafford.

A. purpurea: East to Smith, Saline, Barber.

Stipa comata: Seward.

S. spartea: Marshall, Riley, Clay, Saline, McPherson, Barber, Sedgwick.

S. viridula: Rooks.

Muhlenbergia diffusa: Riley.

M. Glomerata: West and south to Rooks, Rice, Shawnee.

M. gracillima: Hamilton.

M. Mexicana: Jackson, Riley, Saline, Rooks.

M. sobolifera: Riley, Geary.

M. sylvatica: Pottowatomie, Shawnee, Riley.

Alopecurus geniculatus: Republic, Pottawatomie, Riley.

Sporobolus airoides: East and north to Stafford and Hamilton.

S. asper: Pottawatomie, Riley, Saline, Clark.

S. asperifolius: Clark, Rice, Barber.

S. cuspidatus: Riley, Saline.

S. depauperatus: Finney.

S. minor: Nemaha.

S. pilosus: Hamilton.

S. Texanus: Rice.

S. vaginaeflorus: Riley, Saline, Stafford, Reno.

Cinna arundinacea: Miami, Pottawatomie, Riley, Labette.

Agrostis alba: West to Barber, Reno, Republic.
A. scabra; West to Cowley, McPherson, Rooks.
Calamagrostis Canadensis: Hamilton.
C. longifolia: Riley, Barber, Stevens.
Spartina gracilis: Hamilton.
Chloris verticillata: Linn, Pottawotamie, Saline, Wallace, Reno, Seward, Barber, Grant.
Bouteloua hirsuta: Pottawatomie, Riley, Geary, Seward, Barber, Hamilton, Wichita, Sumner.
B. oligostachya: East to Riley and Barber.
Eleusine Indica: Johnson, Miami, Linn, Bourbon, Riley, Labette.
Leptochloe Mucronata: Bourbon, Labette, Greenwood,
Buchloe dactyloides: East to Republic, Riley, Cowley Chase.
Phragmites communis: Pottawatomie, Hamilton.
Munroa squarrosa: East to Barber, Rooks.
Triodia acuminata: Hamilton, Pawnee (in herb. Popenoe).
T. cupraea: Miami, Shawnee, Pottawatomie, Riley, Saline.
T. purpuria: Riley, Rooks.
Redfieldia flexuosa: Seward.
Diplachne fascicularis: Johnson, Jackson, Riley, McPherson, Harper, Ford.
D. rigida: Seward.
Eragrostis capillaris: Johnson to Cherokee, Greenwood, McPherson.
E. curtipedicillata: Barber.
E. oxylepis: Stafford, Barber, Stevens.
E. pectinacea: Johnson, Crawford, Jackson, Labette, Riley, Saline.
E. pilosa: Linn, Riley, Cherokee.
E. Purshii: Pottawatomie, Riley, Sumner.
E. reptans: Riley, Shawnee, Bourbon.
E. tenuis: Pottawatomie, Riley, Saline, Geary.
Koeleria cristata: Republic, Clay, Riley, Saline, McPherson, Reno, Sedgwick, Cowley.
Diarrhena Americana: West to Riley, and Butler.
Distichlis maritima. var. *stricta*: East to Rooks, Stafford, Barber, also Riley.
Poa andina: Riley, Rooks, Saline.
P. compressa: Miami, Shawnee, Riley, Seward, Clark.
P. sylvestris: Riley, Shawnee (in herb. Popenoe).
Bromus ciliatus: Ottawa, Sumner.
B. purgans: Wyandotte, Doniphan, Riley, Greenwood, Rooks.
B. mollis: Riley.
Agropyrum repens: McPherson.
A. unilaterale: Hamilton.
Lolium perenne: Republic.
L. temulentum: Neosho.
Glyceria nervosa: Pottawatomie, Riley.
Festuca nutans: Shawnee, Riley.
F. Shortii: Johnson, Riley.
Elymus striatus: Pottawatomie, Riley, Greenwood, Barber, Hamilton.
E. Sitanion: East to Republic, Trego, Barber,
E. Virginicus: West to Clay, McPherson, Butler, also Trego.
Asprella Hystrix: Wyandotte.

PHYSICAL CULTURE FOR GIRLS.

BY NORA FRYHOFER, '95.

HIGHEST authorities have told us that the coming change in educational methods will be hygenic reform. We already see this change, especially in the education of girls. Their education is not considered complete without some physical training.

There is no longer the great tendency to put a young girl in long dresses, and tell her to lay aside the "romping sports and act like a young lady." It is no longer a mark of especial refinement to possess a pale and delicate face and narrow waist; on the other hand, rosy cheeks, the glow of health, strong constitution, bright eyes, and an erect figure are admired by everyone.

The time has come when health is recognized as the requisite for success and happiness in life; and a girl's education is now planned so that the keeping of a strong body plays an important part in her training. We hear so much said at the present time of the advancement of women socially, that they are coming to fill almost any position, and if the suffrage amendment carries this fall, more will be expected of them than ever. Therefore the necessity of a thorough physical as well as mental education.

The only way by which this training can be accomplished is through the schools and colleges, and no doubt the time has come when physical training will be a requirement in the common schools, and as many advantages given to the girls in the gymnasiums in all the colleges as are now given to the boys.

It is thought by some that many of the physical exercises are too masculine for girls. True, they can be carried to an extreme as everything can. It is not the object of an education to make women into men, or men into women, but to bring out what is best in each. The Swedish and Delsarte movements find general favor, and all girls can use these, if they can't all play baseball or football, or take military drill.

Physical training not only makes a strong body, but gives grace and freedom of movement, which so many girls lack simply because they have not been taught the free and easy use of their muscles. It is just as necessary for a girl to learn to command herself as it is for boys to do so, and if more were given a proper physical training there would be less awkwardness, which is more noticeable in a girl than in a boy, and more grace which is always expected of a girl.

The Value of Knowledge.

A knowledge of the reason of things is, of course, valuable in every calling in life, but in none is it more important than in the cultivation of the soil. A familiarity with the processes by which nature acts not only teaches one how to do those things that are possible, but saves him from wasting his energies by uselessly attempting to do those things that are impossible. Hundreds, even thousands of fruit-growers, for example, have felt when late frosts nipped a promising fruit prospect in the bud, that if they could only have delayed the budding until later in the season, the bloom would have escaped and a bountiful crop might have been secured, Not a few of these have tried to secure this delay in budding by mulching the roots of the trees heavily, in the belief that if the soil about the roots could be kept cold by being protected from the rays of the sun, the spring awakening would be postponed. The attempt has always failed because it has been based on a lack of knowledge of nature's methods. In perennial plants, which live from year to year, the last business of the plant in the fall is to lay up a supply of the material with which to begin work in the spring, before the roots become active. In deciduous trees, this garnered store of food is deposited in the pith and pith-rays, and in the *cambium*, or layer of cells between the bark and the wood. By the action of the sun's rays in the spring, this store of plant food becoms active, regardless of the condition of the soil and independent of the activity of the roots. Keeping the ground cold by heavy mulching, therefore, simply postpones root activity and prevents it reinforcing the work begun by the sun's action on branch and trunk. The buds swell when spring warmth on the latter calls them forth, and if frosts come they are nipped. That atmospheric warmth and not root warmth causes budding can easily be demonstrated by drawing the branch of a tree inside of a warm room in mid-winter, when the tree grows close to a window, and keeping it there for a few days. In due time the branch will bud regardless of outside conditions, but this not being followed in course by the activity of the roots because the sun has not warmed up the soil in which they are buried, the buds shrivel and come to nought. This observation of nature's modes will teach us where mulching is advantageous. Strawberries, for example, may well be mulched, not only for protection against winter's cold, but to prevent, to a limited extent, too-early blossoming, because the entire plant can be covered, but if winter protection and early blossoming are both wanted, the mulch must be removed early. With biennial plants, also, which store a supply of plant food in the roots to begin business with in the second year, as in the case of the beet, the carrot, the turnip, etc., early spring development can be delayed just as long as the ground can be kept cold.

Again, if the effect of seed formation be understood, the farmer will comprehend why no late-cut forage crop can ever be expected to give as good feeding value as if cut earlier. The mission of the annual plant is to propogate itself. Its method of development is, first, with more or less stem, a large development of roots and leaves, which collect and prepare food for future growth; next, there is the formation of flowers; and, lastly, the production of seeds; then the plant dies. The formation of seeds is its mission, and in performing it, it sacrifices itself, drawing for that purpose upon all the nutriment stored in other parts of the plant as far as possible. The extent to which, under circumstances of difficulty, the plant will sacrifice its own substance in order that seed may be formed is sometimes almost startling, because it seems to indicate conscious purpose and conscious and willing self-sacrifice. In Heilriegel and Wilfarth's experiments with the legumes, which proved that these plants drew nitrogen from the atmosphere by means of tubercles on their roots, the cultivation was carried on in pots of pure sand previously sterilized, the plants being fed with definite quantities of nutriment introduced in the water with which the the plants were watered. In the different pots the plants were fed different amounts of fertilizers, from nothing up to a quantity ample for their growth. Those that were but half fed would grow briskly enough for a time, forming the first, second, and perhaps the third pair of leaves vigorously. Then they would pause; presently they would begin to form another pair of leaves, smaller than the others; at the same time the first pair would turn yellow and gradually shivel as the last pair developed, showing that when the supply of plant food was cut off by way of the roots, the plant keeps on trying to reach the stage of formation, using its early formed members as material. In some instances they succeed in forming seed in this way, although it would, of course, be light and only partially developed; still the germ would be there. What happened in this experiment so strikingly, happens habitually, although it is less apparent in the case of annuals generally. The substance of the previously formed plant is used to perfect the seed. In corn, as all have observed, the stalk begins to turn yellow at the first joint, indicating that nutriment has ceased to come up through the roots long before the grain is completed. The final elaboration of the ear is carried on by means of the materials already contained in the plant. The time to cut a forage crop, therefore, is just at the point when root feeding ceases and the final finishing of the seed is about to begin. In cutting corn for ensilage, this is when the flint varieties have just passed the glazing stage and the dent varieties begin to show the dent fairly well. We believe it would equally well express the time with all varieties to say when the stalk begins to show yellow at the ground. To cut hay after the seed has developed, is to obtain a woody and innutritious crop. The reason is that the nutriment contained in the stalk has been drawn up and used to elaborate the seed.—*Live-Stock Indicator.*

The Farmer's Scrap Book.

We remember calling to spend an evening with a neighboring farmer and stock breeder some years ago and found him busy in his den, as his wife called the office or library where he kept his books and papers, with half a dozen or more agricultural exchanges around him from which he was busy clipping every article that he thought worthy of preservation. He stated that it was his regular Saturday evening task, and that he found the pratice invaluable. Having clipped out the articles which he thought worthy of preservation, he pasted them in books that he esteemed of little value, such as agricultural reports, etc., cutting out every other leaf and having one book for each subject, as, for example, one for stock-breeding, one for swine-breeding, one for dairying, and another for grain raising. Having carefully pasted the clippings on each alternate leaf, he indexed them in the front, and then in red ink made certain private marks which indicated to him the value of these separate articles. He thus kept in brief space and of easy reference everything that impressed him as valuable in any one of the half dozen agricultural papers which came to his table. It is needless to say that this man's views on any subject connected with agriculture, and especially on stock-breeding, have as great weight as those of any man we know, and we attribute much of it to the care with which he has collected and preserved during a long life everything which seemed to him of special value.

There is not a farmer who reads this paper who cannot do the same thing, and never miss the time it takes to do it. The fact that he intends to use the choice articles in the paper in this way makes him a much more careful reader and impresses, on the first reading, the points made in the article much more clearly on his memory. If at any time afterward he wishes to investigate the subject, he can do it without loss of time, and in the course of a few years he has a library of his own making which is worth more to him on matters of practical agriculture than all the books he can buy. Where farmers do not keep files of their papers, as, in fact, few of them do, we strongly urge this practice. When a man has thus prepared himself for a year, how easy it is, when asked to contribute an article to an institute or to make an address on any agricultural subject on which he is regarded as an authority, to turn to his scrap book and see all that has been said on the subject by the best thinkers and writers in any paper that comes to his table. Nor will his address for the paper be made up of what writers call "cram," or an undigested synopsis of the facts as given by other men and forgotten by the compiler as soon as the work is done. On the other hand, it will be made up of matter which he thought so well of as to be worthy of preservation, which he has fixed firmly in his own mind, and to which he need refer only to refresh his memory and bring clearly before him conclusions to which he had arrived. By all means start this week and make a scrap book, and in case files are not kept the more clippings that are taken from this paper the more highly we feel complimented, but on no account do we wish our readers to clip anything which, after careful reading, they would not wish to preserve for future reference.—*Live Stock Indicator.*

Agricultural Education.

In a recent article, W. I. Buchanan, chief of the Agricultural Department at the World's Fair, makes the following valuable suggestions:—

"Experiment stations, agricultural colleges, State boards of agriculture, farmer's organizations, and that best of schools, the farmers' institute, are of inestimable benefit to our country. To these should be added agricultural education in our normal schools and in our public schools located in small villages and in the country.

"The country school house can and should be greatly improved. The boys and girls should be furnished with the best teachers; the school house should be made attractive and pretty; the school yard should be sodded and planted with flowers, shrubs, and trees; and in each school there should be herbariums containing all the different plants, weeds, and grasses growing in the neighborhood, that students might grow up with a knowledge of plant life about them, and possibly be stimulated by that knowledge to know more of the wonders of botany, and thus lay part of the foundation for a successful life as a farmer."

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

NEWS FROM THE FARM.

A NEW HOLSTEIN-FRIESIAN BULL.

The Farm Department has exchanged Sylvia's Chief, the old Holstein-Friesian bull, for a young bull of the same breed, which has an illustrious parentage. He is sired by Mechthilde's Sir Henry of Maplewood 6296, and out of Princess Pel's Mechthilde 29486, a young cow which took first prize at the World's Fair last year.

His sire is out of the famous cow "Mechthilde," which holds the champion record of the breed as a butter maker. She was tested from June 10th to 16th, inclusive, 1890. In this period of seven days she gave 717 pounds of milk from which was churned 39 pounds 10½ ounces of butter. Average daily milk yield, 102.43 pounds. Average daily butter product, 5.66 pounds. Average number of pounds of milk required for one pound of butter, 17.71 pounds. In a thirty-day test in 1890 she produced 150½ pounds of butter, and in a sixty-day test produced 292.3 pounds of butter. Mechthilde was bred in Holland, and brought to this country in 1887, where her life has been one long series of triumphs at shows and dairy tests.

The young bull now owned by the Farm Department has this distinguished cow for his grand-dam on both sides. That is to say, he is the result of inbreeding. His sire, Mechthilde's son, is also the sire of his dam, Princess Pel's Mechthilde, and that the grand old cow transmits her qualities to her offspring is proved by the fact that her grand-daughter took first prize at the World's Fair. as noted. The young bull was calved August 7th, 1893, and is hence now less than ten months old. He is recorded in the Western H. F. Association herd book under the burdensome name of "Princess Pel's Mechthilde's Sir Henry," which shows his aristocratic origin at once. In color he is well marked, black predominating, and his dairy points are first-class in every respect. He was obtained of the noted breeder of Holstein-Friesians, Mr. M. E. Moore of Cameron, Missouri. C. C. G.

NOTES.

Oats have done very poorly during the dry weather. Many of the plants are heading out and are only about eight inches tall. A few more showers will bring them out all right.

Corn is up nicely, with a perfect stand, and has received the first cultivation. It escaped any injury from the late frost, but the cool, dry weather makes a slow growth and a pale, sickly color.

The wheat crop on the Farm seems to be fated this year. After struggling along through many setbacks, just as the most of it was in blossom, it was nipped by the late frost, and some of it will not fill.

Turkestan alfalfa, *Medicago saliva*, var. *Turkestanica*, is an important addition made this week to the list of forage plants under trial on the Farm. The seed was obtained through the U. S. Consul at Batoum, Russia, for the U. S. Department of Agriculture, and was from stock tested on the Imperial plantation of Russia and gathered from one of the best fields in the Tashkent districts of Turkestan. Prof. Coville, Botanist of the Department of Agriculture, who sends us our seed, says that it is especially adapted to withstand drought, and is regarded as the most valuable forage plant for sub-arid regions in its native country. Part of the seed has been planted here and part sent to the sub-station in Finney County, where it will be grown on irrigated and non-irrigated land.

The herd was turned out to pasture the 16th, after being fed in the barn two hundred days. Almost their only feed during this time was ensilage, no grain being fed to any except several head of dairy cattle. A very little coarseness was fed from time to time in the rack in the yard as they were turned out. The herd of fifty ate during this time 354,184 pounds, or a little over 177 tons. A day's feed ranged from 1500 pounds to 2200 pounds. While the smaller amounts were being fed, some roughness was fed in connection, but generally there was nothing fed but the ensilage. The quality was good, which was shown by the fact that the dairy cattle were fed it as late as it lasted, after they were turned out to grass. and were always greedy to get it. Out of 210 tons put up in three silos, 16,570 pounds were taken out as rotten, and 35,026 pounds were lost by evaporation. Out of the 362,477 pounds fed, 8,293 were refused; some of this was caused by overfeeding, a little was spoiled that could not be separated out in feeding, and some was small pieces of the corn stalks, but the last did not amount to as much as the dry leaves that were fired and killed in the field. The 210 tons were the product of twenty acres, and required 733 hours labor and 179 hours team work to put it up, besides the fireman and engine which furnished the power to run the cutter. A force of eight men and five horses would put up about twenty-six tons a day when every thing was favorable, but this was above the average. Corn was the principal crop used, but a small portion of Kaffir corn was put up which made excellent ensilage that was eaten well. This is the sixth year that ensilage has been put up here on a large scale, and this year's results make a very good average.

F. C. BURTIS.

Prof. Brown's Musicale.

It was a merry crowd that gathered at the residence of Prof. Brown last Tuesday evening, in response to his kind invitation to be present at the musical rehearsal.

The evening was one continual round of pleasure, beginning at five oclock with music by the College Band, which, after the rendition of several numbers, gave place to the Orchestra, which entertained the guests with some choice selections.

Time thus spent passed rapidly, and at seven oclock the Professor called a halt and requested the young people to "go to (two) now," which suggestion was acted upon as soon as given, and soon the guests were going "two and two" and discussing the dainty refreshments Mrs. Brown, assisted by Mrs. Kedzie, brought out in tempting array.

After refreshments, all were given walking papers in the shape of elegant, hand-painted souvenir cards, presented by little Mr. Brown. but were instructed not to walk until further orders.

The remainder of the evening was filled in with music by the Glee Club, Mandolin Club, Orchestra, and by pleasant conversation till ten o'clock, when the Band, escorted by the remainder of the guests, went to Captain Cavenaugh's residence and serenaded the Captain and family, after which all went their several ways with happy recollections of a pleasant evening. C. E. C.

GENERAL LOCAL NOTES.

Mrs. Stump attended Chapel Friday afternoon.

J. E. Trembly left for home Monday on account of sickness.

The Rev. Mr. Veazie led the Chapel exercises on Monday.

Aimee Kenney was a visitor Friday in company of Olive Wilson.

The College Cadets will take part in the exercises of Memorial Day.

C. S. Marty, First-year, goes home this week on account of sickness.

T. Hood, brother of Myrtle Hood, Second-year, visited College this week.

T. M. Robertson, Second-year, has been out all this week on account of the measles.

Prof. Popenoe has a fine new surrey which can be and is enjoyed by the whole family.

Prof. Popenoe enjoyed a visit Saturday and Sunday from his brother F. O. Popenoe, and family, of Topeka.

E. R. Farwell, Third-year, and Mabel Farwell, Second-year, enjoyed a short visit from their brother of Osborne on Wednesday.

Assistant Horticulturist Sears succumbed to a severe attack of rheumatism on Saturday last, and on Monday went home for a few days' rest.

The sharp frosts of Saturday and Sunday nights cut the strawberries short probably twenty-five per cent. The injury done to the grapes was slight.

The first picking of strawberries was made Monday. The berries are for the most part large and well flavored and meet with a ready sale —for cash.

Prof. Brown was badly shaken up on Monday morning by being thrown from his buggy by a run-away horse. The buggy was slightly damaged.

E. G. Joss, Second-year, finds his eyes too weak following an attack of measles to continue studies, and drops out of classes to go to work on the home farm in Brown County.

Mrs. Paul Staley, of Springfield, Ohio, and Mrs. Green, of Leavenworth, were shown through the College buildings yesterday by Mrs. Huntress and Mrs. Halloway of the city.

Mrs. Catt, of Brooklyn, who lectured Thursday evening at Grange Hall in behalf of "Equal Suffrage" visited the College Friday morning in company of Mrs. E. L. Knostman.

Maj. Hamilton, Department of the Platte, Inspector General, visited the College last Monday in an official capacity. He found the Cadets ready for the unexpected inspection, and had a good word to say for and to them.

At a business meeting of the Y. W. C. A. the past week, the following officers were elected for the coming year. President, Ethel Patten; Vice President, Maud Kennett; Corresponding Secretary, Ellen Norton; Recording Secretary, Minnie Lyon; Treasurer, Lucy Ward.

The Sixth Division of the Third-year Class appeared in Chapel yesterday afternoon with orations, as follows: "American Protective Association," C. S. Pope; "An Interrogation," W. H. Phipps; "The Jerusalem of Today," Maud E. Kennett; "A Coming Renaissance," B. F. S. Royer; "A Tribute to the Kansan," A. E. Ridenour; "The Need of Forest Protection," R. W. Rader; "Keeley Cure," I. A. Robertson; "Two Views of the Jew," Cora I. Stump; "A Land of Romance," Ada Rice. The exercises opened with a piano solo by Miss Helder, and during the exercises Miss Mary Lyman rendered a vocal solo entitled, "Old Madrid."

Miss Cady, State Secretary of the College Y. W. C. A., visited the College yesterday, giving the girls much encouragement, and inspiring them to do more active work.

GRADUATES AND FORMER STUDENTS.

Myrtle Whaley, Second-year 1892-3, visited College Friday.

Bertha Spohr, Second-year in 1892-3, was at College Friday.

John Davis, '90, has been re-elected Principal of the High School at Beloit, Kansas.

K. C. Davis, '91, hopes to be present at Commencement to take the second degree.

Lora Waters, '88, having finished her school in town, has been seen almost daily at College.

Minnie Moffet-Williams, a former student, and Sadie Marsh were present at the Friday exercises.

R. J. Brock, '91, delivered an address yesterday before the High School at Centralia.

T. E. Lyon, '93, was again among the visitors in Chapel exercises yesterday afternoon.

George Smith, '93, having finished his term in the City School, is once more seen about College. He thinks of taking a post-graduate course.

E. J. Abell, Fourth-year in 1893, writes from Beloit, Kan., where he is visiting R. C. Abell, Second-year in 1887, that he still hopes to complete his course here.

Elizabeth Edwards, '92, should have been added to the list of teachers in the Model School of the Riley County Teachers' Institutute, published in last week's INDUSTRIALIST.

G. L. Clothier, '92, County Superintendent of Waubaunsee County, came up Thursday. He will enjoy a few days in renewing old acquaintances. He expects to conduct, at Alma, the largest Institute ever held in the county.

S. I. Wilkin, Third-year in 1892, writes from Bow Creek, Kansas, of such long-continued dry weather that he almost despairs of a crop this year, and fears a necessary postponement of return to College for himself, his brother, and sister, all of whom wish to be here next year.

C. L. Marlatt, '84, for several years past employed in the Entomological Division, U. S. Department of Agriculture, at Washington, has been appointed First-Assistant Entomologist, vice L. O. Howard, promoted to the head of the department to fill the vacancy made by the resignation of Prof. C. V. Riley. In commenting on the appointment, the Kansas City *Times* has this to say: "Prof. C. L. Marlatt of Kansas has been appointed Assistant Entomologist in the Agricultural Department, a place of considerable importance and much responsibility. There is more honor for Kansas in having one man ready to fill a position like this than in having ninety-and-nine whose qualifications consist wholly in their ability to draw a salary. Also it has been noticed that Kansas is furnishing even more than its share of the scientific specialists demanded by the Government. The Kansas scientist, unlike his fellow in New York or New England, studies bugs and flowers and others of nature's products as much as he studies books. As a consequence he adds the knowledge of experience to that derived from theory, and he is usually the practical man for a practical place."

COLLEGE ORGANIZATIONS.

May 18th.

Alpha Betas called to order by Pres. Kimball. Devotio nby Gertrude Havens. Ada Ingman read the story of "The Engineer at the Concert" in a very pleasing manner. One of the best declamations of the year, "Our Closing Century," was delivered by J. J. Fryhofer. Gertrude Havens demonstrated her familiarity with the resources and conveniences of "Corner-Cupboards" in a well-written essay, the hearty applause received showing that the Society was also acquainted with the self-same cupboards. The subject "Is the physiognomy a true indication of the mental ability? Is phrenology a true science?" was debated affirmatively by Jno. E. Taylor and Inez Palmer, Lucy H. Waters and Etta Ridenour presenting the negative. The judges, Misses Mary Cottrell and Bertha Kimball and Mr. Payne, decided in favor of the negative, although the question was well argued on both sides. A unique feature of the session was a poetical edition of the Gleaner by Sadie Moore. It was an unusually interesting number and much appreciated. Among the articles were "Those May-Baskets," "Hofer vs. Payne," "The Boy and the Bee," "Wanted, A Girl," "Those Ragged old Assignments," "Retrospective Glances." After recess Messrs. Clothier, Coffey, Sandstrom, and Ridenour entertained the Society with a solo and chorus "Her Father keeps the Little Candy Store." Discussions on the topics "Does the pulpit afford a better field for eloquence than the bar?" "Should Federal Judges be appointed by the people?" "Should citizenship be given to the Indian?" were given by different members. Mr. Gus. Kimball, upon request, spoke upon the second question, presenting the negative. Business. Report of Critic. After a harmonica and organ duet by W. N. Coffey and R. W. Clothier, came roll-call and adjournment. L. H. W.

May 19th.

The Hamiltons were called to order at the usual time by Pres. Scheel. Roll-call showed a goodly

number present in spite of the numerous parties last night and the excursion today. C. S. Marty led the Society in devotion. The program of the evening was opened by a declamation from H. R. Gilbert upon "Jefferson and Adams as political leaders." W. O. Peterson's oration upon the "Roman Catholic Church" was well written and delivered. In it he told of the great influence of this church in politics as well as religous matters. He stated that they were growing in power every year, and at the present time they govern most of our large cities. The debate upon the question "Resolved, that the Coxey movement is a menace to the Government," was argued on the affirmative by W. O Staver and E. W. Graham, and on the negative by M. V. Hester and M. W. Sanderson. Each side brought forth good argument, but the Society decided in favor of the affirmative. Norris with his harp and Conrad with his guitar furnished the Society with some excellent music which was highly appreciated by all present. C. S. Pope's select reading about "Abraham Lincoln as a story teller" was quite amusing and very well read. It told how he would tell a story to avoid talking upon some subject that he disliked to discuss. The Recorder edited by G. H. Dial was well up to the standard. Some of the principal pieces were, "A Hunt," "Two Dreams and Their Interpetation," "Characteristics of a Night." The partial debate carried over from last week was finished by Mr. Noble on the affirmative and G. C. Hall on the negative. The Society decided in favor of the negative. This closed the program and unfinished and new business were hurriedly passed over and the Society adjourned at a little after 10:30. F. A. D.

May 19th.

The Webster society was called to order by Pres. Stingley. After roll-call, C. D. McCauley led in prayer. The question for debate was "Resolved, that industrial pursuits offer more inducements to the young men than do the professions. C. McCauley in introducing the affirmative gave the extent of the field of industries. He said also that statistics show that 90 per cent of the people receive but a common school education; thus it may be seen that they take up some industrial pursuit. J. Amnel said in defense that statistics go to show that the majority of young men seek some profession. He said that men who had won any distinction had learned some profession. Geo. Lechner in speaking further on the affirmative said that it has long since been proven that men who wish to make money choose some trade. Mr. Grisier in speaking on the negative said that a professional man won wealth as well as distinction. In closing the affirmative, C. D. McCauley said that a man with some trade will make more money in a year than will a professional man. In summing up the negative J. Amnel said the professional men were more steady and did not partake in the strikes that were so common. The Society decided in favor of the negative. G. G. Moore then delivered a well-chosen declamation, "Our lives are measured by what we do." The Webster Reporter was next read by G.A. Dean. The motto, "There is no excellence without great labor," was ably amplified in the editorial. After recess, R. W. Bishoff gave us a discussion on "The Oil Wells of Kansas." Critic's report. After the general routine of business, a committee was appointed to get a subject for general discussion. "Resolved, that a suitable gymnasium should be provided and gymnastic exercises should be made compulsory," was the question and was well discussed by the members. Adjournment, 10:30. E. R. F.

Are These Men Your Neighbors?

We have printed so many commendations of the *Gazette's* work that it may not be out of order to show the reverse side of the picture now and then. An appreciative reader who though to extent our circulation in his vicinity states his experience thus:—

"I commenced canvassing for your paper here, but one farmer told me he had forgot more than the writers for the paper ever knew! Another said he 'did not believe in reading stock and farm papers that city chaps was writing, as they could not 'learn' him anything.' Another said he 'seed' one of them papers once, and he did not think it was anything but 'one of them Chicago traps to catch the farmers' money.' Now if you could come down sometime and ride through the country with me you would find that these poor, benighted heathens are much like Prof. Sanborn's Ozark cattle. I have been here three years, and with one or two exceptions have not seen a good farmer or stock-raiser since I have been in this woebegone place."

The foregoing is not fiction; it is fact. And, more's the pity, it comes from a point only five miles from the capital of one of the Central Western States. We are inclined to the opinion that one quoted remark contains much truth; we do not believe that the *Gazette* or any other journal could teach such farmers anything. They are past learning; like the little girl in the story, they haven't the capacity. But if we only had the name and address of that giant intellect that "had forgotton more than the contributors to the papers ever knew" we would beseech him to set astir the cells of his memory and, entering the ranks of those whose experiences go to make up the bulk of the *Gazette's* matter, recall his forgotten knowledge for the benefit of our readers. We can assure him a great future if only he can get the gears of his memory in good running order. What a boon to humankind in forgetfulness! Just imagine what would have happened had this sapient farmer retained in his mind all he ever knew about farming! How his head would have expanded until—like little froggie in the fable who tried to swell as big as his mother—it burst.

But the *Gazette* is put in an entirely new role as "a Chicago trap to catch the farmers' money." We don't mind confessing that we wish we could catch a little more of it than $1 a year for a $5 paper. If we know anything about it, the farmers are at present catching our money. In this connection we recall a remark by ex-Governor of one of our greatest States to the effect that if he had read certain articles in the *Gazette* before he began breeding live stock he would have been much richer. That man wished the *Gazette* "trap" had caught his money sooner than it did. But our correspondent should not despair. He is in a fine country—a country so fine that it supports even the class of farmers he writes about, and higher praise of a country could not be spoken. Like our friend from a Western State who stated in these columns some time ago that he "turned with disgust from talking with such farmers and found relief in going home and conversing with his well-bred Poland-Chinas," so this correspondent may find solace in the companionship of the Shorthorns which are in his charge.—*Breeder's Gazette.*

How to Raise a Mortgage.

At a recent farmers' institute held Greene County, Iowa, Mr. C. P. Walker gave as his belief the following as a good way to raise the mortgage on a farm:—

"First, take the man on a small farm of 80 acres, who has a family and is fairly fixed, with a team and tools enough to run the farm. I would suggest to that man and his wife also to have a few plain rules to go by, and then try and live as close to them as possible. A man with an 80-acre farm must adapt himself to that number of acres. He must not overstock it, so that he cannot do anything well. Keep one good team and either a span of brood mares or a span of good colts that will improve with age. Keep from four to ten cows, and instead of having these dry nine months in the year, have them give milk all months in the year. See that they are properly housed, fed, and cared for to produce the greatest amount of milk and butter. Decide what breed of hogs to keep, and stick to that breed. Keep from ten to fifteen brood sows, and should you have bad luck in the spring with pigs, breed so as to have a second litter in September. Arrange your debts so that you won't have to feed all your shouts off in the winter. Feed part so as to have some to sell almost every month, but have the main part of your pigs fattened in the pasture in May, June, and July. Always make it a point to have something to sell off the farm every week in the year instead of having a large store bill in the fall or winter. Try and buy what your family needs with butter, eggs, poultry, potatoes, etc. I think a farmer should live largely upon the produce of his farm. Have a good garden so arranged that it can be worked by a horse. Take care of the little things, and the mortgage will soon melt away. Have your mortgage with the option of paying $100 or a multiple thereof on interest pay-day, and when you sell a bunch of hogs try and arrange so that the bulk of the money can go to the paying off of the mortgage. Take care of your farm machinery. There are enough binders and valuable machinery standing out and rotting now in this and adjoining townships to pay off several large mortgages.

"The eighty-acre farmer should not try to handle too many cattle, but keep lots of hogs, and by raising clover he can raise hogs and corn on the same farm. A man with a 160-acre farm can keep more cattle, and should keep them in good, thrifty, growing condition until ready to turn off. One point I wish to make before closing is, do not try to pay off the mortgage on pure speculation; that is, buying feeding cattle in the fall and corn and hogs to follow them, paying interest on the money borrowed. I am afraid such speculation would raise a mortgage instead of paying it off."

Supt. W. H. Olin of the Osborne Schools, writes as follows: "The National Educational Association meets at Asbury Park, New Jersey, this year; and a delightful trip at the least expense possible has been planned by State Manager Prof. J. N. Wilkinson. There will be no official train this side of Chicago, but the official train route for Kansas delegates East of Chicago is to be either Baltimore and Ohio or Pennsylvania Central railroad (the State Manager has not decided which). Leave Chicago July 5th or 6th, spend one day in Washington, visit Congress in session (Won't get through tariff bill before that time), many other points of national interest, with a probable excursion to Mt. Vernon, and then on to Asbury Convention. The expense of this trip will be, membership fee N. E. A., $2; car fare—round trip ticket good returning until September 1st—one fare from Kansas City about $30; meals, as much or little as you desire, approximately, $5. Total expense, $38. All railroads west of Kansas City will grant excursion rates, so the whole expense for any one from points no farther west than Osborne need not exceed $50. I am not State manager, but, by request, I expect to help Manager Wilkinson by assisting all those who wish to go via Rock Island route to Chicago, point Manager Wilkinson takes charge of the official train for Asbury Park. Any desiring further information relative to N. E. A. or who wish to plan for the trip, I would be glad to correspond with."

To drive well you must keep your eye and your mind on the horse. Watch his ears. They will be pricked forward when he is about to shy, droop when he is tired, fly back just before he "breaks" (into a gallop) and before he kicks. Before kicking, too, a horse usually tucks in his tail and hunches his back a little. When you observe any of these indications, speak to him sharply and pull up his head.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.

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All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary

A PLEA FOR HOME-GROWN STRAWBERRIES.

BY PROF. S. C. MASON.

THE strawberry of all our northern fruits ought to be grown nearest to the consumer. No other fruit suffers so much from long transportation or from lapse of time between the moment when it is picked and the moment when it is served up as the most delicious product of modern horticulture. Along with these assertions goes the fact that no other fruit is better adapted to cultivation in small plantations, or in the still more limited beds of the city lots.

The time required for a plantation to come into bearing is scarcely more than that for a crop of wheat. Plants may be set in September and quite a liberal foretaste of what is to come may be gathered the next May with the maximum yield to follow in another year; or with the plants set in April, the heaviest crop is picked in a year from May or June. With so short a time to wait, even the tenant of two years can afford to plant a berry patch.

To say that strawberries are as easily grown as corn will be to have the statement challenged by most people; but let the seeker after knowledge gather what information he can on the subject of berry culture and then attend a good rousing farmers institute and listen to a discussion on corn-raising where the relative merits of listing and check rowing, early and late planting, deep and shallow cultivation are discussed, not to mention a score of other points, and he will conclude that strawberry culture is a very simple art in comparison.

Many dollars are sent out of Manhattan each year for berries that might have been grown at home, and the same holds true of a hundred other Kansas towns. The points in favor of home-grown berries are first, the superior quality of the fruit may be enjoyed; second, the employment of home labor; and third, the keeping at home of money that goes for transportation and profits on the crop; last, but not least, we may feel sure that the amount of home-grown berries consumed will on account of their superior quality and freshness be much greater than of the imported article.

Not only will the firmer varieties such as are usually shipped reach the customer in much better condition, but varieties not grown for shipment on account of their softer texture, yet possessing the flavor and aroma of the wild berries of the meadows, may be enjoyed upon the table fresh from the vines and ripened to perfection. People enjoy strawberries, even when a lot that has been shipped two or three hundred miles and is three days old, must be picked over and half of them rejected as unfit for the table; and the majority of our people, if they taste strawberries at all, must take them of this quality. They are strawberries, and that is about all that can be said.

Only those can know the real luxury of strawberries, who can have fresh from the vines such varieties as the Havesland, Louise, Charles Downing, Ella, Duncan, Cumberland, or a dozen more that might be named, new and old. The more standard Crescents, Captain Jacks, Bubachs, Warfields, Clouds, and Wilsons are well worth knowing by name if you can eat them the day they are picked, railroad transportation left out, but get them a day's ride by express and they are best known as simply strawberries.

The number of varieties is legion, and they include those adapted to a variety of soils and climates. The one thing they all insist upon is plenty of moisture. Given a good piece of rich, mellow land, a trifle sandy, rather than too close, with an abundance of well water at from fifteen to thirty feet as is the usual case with our first and second bottom lands in Kansas, and you have the possibilities of bushels of berries. Any town having such a location adjacent, and the most of them have plenty of room within the town site, can as well be supplied with home-grown berries as not.

If any crop can be made to produce more value to the acre than strawberries, I have yet to learn what it is, and the surprise to me is not that some towns have berries to ship, but that they have so many places to ship them to.

WHAT OUR STUDENTS READ.

BY JULIA R. PEARCE '90.

IT may perhaps be interesting to readers of the INDUSTRIALIST to know something of the nature of the books read by the students, and the amount of reading they do aside from text-book lessons. Although there is a great deal of reading and studying done in the library of which no account can be taken, a glance at the record of books taken home for further work may serve as a guide in our estimate of the class of literature the students use.

Those in fourth-year studies, forty-two in number, have drawn from the library since College opened in September last 1909 books. Of these 969 are credited to the twenty-five young men of the class, 940 to the young ladies, making an average of 39 each for the boys and 56 each for the girls. The nature of the 1909 volumes can only be suggested by stating that 70 were works of fiction, 709 were bound magazines probably used as books of reference in class work, leaving 1130 miscellaneous works, among which may be found works on general science, electricity, engineering, history, social and political science. The 70 novels are charged 50 to the seventeen girls and 20 to the twenty-five boys. This unequal distribution can be partly accounted for by the fact that the young ladies had literature for one study during the fall term, while the young men spent the same hour of the day in the study of agriculture. The 709 magazines are charged 401 to the girls and 308 to the boys, leaving miscellaneous scientific works 31 each to the girls and 26 each to the boys.

The Third-year Class, numbering seventy-three, have drawn 1349 volumes, the forty-three boys claiming 765 of these, an average of 18 each; and the thirty girls 584, an average of 20 each. The forty-three boys drew 83 novels, and the thirty girls 144, making an average of 2 each for the boys and nearly 5 each for the girls.

The number of books drawn out by the First-year and Second-year students amounting to several thousands, it is impossible in the time available for this article to give anything like statistics as to the class of books read.

Of the fifty-five Second-year girls, two have no record on the library books, and of the eighty-six boys, four have not drawn any books. Among the First-years, eighty-one of the one hundred and seventy-seven boys and twenty-six of the ninety-eight girls have not drawn a book from the library this year. This does not mean that they have not used the library at all, as some of them have spent a part of the day reading in the library nearly every school day of the year, while there are perhaps others who have not read a library book nor any portion of one during the year.

It would be interesting to know the class of books chosen by the First and Second-year classes, and to note their growth in the amount of reading done and the character of the literature chosen in the different years of their work as they climbed from B to Fourth-year. Perhaps we may be able to give statistics on these points in a future number of the INDUSTRIALIST.

PAPERS FOR THE FARMERS.

BY SUPT. J. S. C. THOMPSON.

EXCEPT with a certain small class of farmers who, in the company of a decided minority of people in other vocations, are opposed to progress of whatever nature, or are at least indifferent to it, the agricultural journals are a necessity; and one or more find a place on the table of every real live farmer. But more should be taken than the average farmer subscribes for, and it is with the hope of extending the circulation of this and kindred classes of journals that this article is written, it being the belief of the writer that the mere presentation of names, addresses, and prices will bring about this result.

As will be noticed in the following list, farm papers are cheap, and, so far as cost is concerned, there is really no excuse for doing without them. Many times a single scrap of information will pay the cost of half a dozen or more papers, and the multitude of helpful hints to be gleaned by careful reading cannot be estimated in dollars and cents.

In presenting the accompanying list it is the intention of the writer to include only the reputable papers of which he has personal knowledge. Many good ones are perhaps omitted, but no "fake" publication finds a place in the list. The writer has his preference too, but must be excused from giving them in print. The list is therefore arranged alphabetically, that there may be no charge of favoritism. Most publishers will send sample copies on application, and the prospective subscriber can thus choose to suit himself.

The name of the paper, place of publication, and subscription price are given in each case—the first

column being the regular subscription price, and the second the reduced price made to agents and publishers of other papers. Your local publisher will, or should if you are his patron, take your subscription for any paper in the list at the wholesale price:—

AGRICULTURAL.		
Agricultural Epitomist, Indianapolis; monthly	$ .50	$ .35
American Agriculturist, New York; monthly	1.50	1.10
Colman's Rural World, St. Louis; weekly	1.00	.85
Country Gentleman, Albany, N. Y.; weekly	2.50	1.65
Farm, Field, and Fireside, Chicago; weekly	1.00	.95
Farm and Fireside, Springfield, O; semi-monthly	.50	.45
Farm Journal, Philidelphia; monthly	.50	.30
Farm, Stock, and Home, Minneapolis, Minn. semi-m	.50	.45
Farmers' Review, Chicago; weekly	1.25	1.00
Homestead, Des Moines, Iowa; weekly	1.00	.95
Kansas Farmer, Topeka; weekly	1.00	.90
Live-Stock Indicator, Kansas City, Mo.; weekly	1.00	.85
Mirror and Farmer, Manchester, N. H.; weekly	1.00	.70
Orange Judd Farmer, Chicago; weekly	1.00	.85
New England Farmer, Boston; weekly	2.00	1.55
Practical Farmer, Philadelphia; weekly	1.00	.85
Prairie Farmer, Chicago; weekly	1.00	.80
Rural New Yorker, New York; weekly	1.00	1.00
HORTICULTURAL AND FLORAL.		
American Gardening, New York; semi-monthly	1.00	.90
Garden and Forest, New York; weekly	4.00	3.25
Gardening, Chicago; semi-monthly	1.00	.85
LIVE-STOCK, POULTRY, AND DAIRY.		
American Poultry Journal, Chicago; monthly	1.00	.65
American Poultry Yard, Hartford, Ct.; weekly	1.50	1.15
Breeders' Gazette, Chicago; weekly	2.60	1.50
Dairy World, Chicago; monthly	1.00	.60
Hoard's Dairyman, Ft. Atkinson, Wis.; weekly	1.00	.90
Poultry Monthly, Albany, N. Y.; monthly	1.00	.85
LITERARY, DOMESTIC, JUVENILE, ETC.		
Atlantic Monthly, Boston; monthly	4.00	3.30
ab yland, Boston; monthly	.50	.45
Century Magazine, New York; monthly	4.00	3 05
Cosmopolitan Magazine, New York; monthly	1.50	1.35
Demorest's Magazine, New York; monthly	2.00	1.65
Forum, New York; monthly	3.00	2.75
Good Housekeeping, Springfield, Mass; monthly	2.00	1.75
Harpers' Magazine, New York; monthly	4.00	3.15
Harpers' Weekly, New York; weekly	4.00	3.35
Harpers' Young People, New York; weekly	2.00	1.60
Household, Boston; monthly	1.00	.85
Household, Minneapolis, Minn.; semi-monthly	1.00	.70
Ladies' Home Journal, Philadelphia; monthly	1.00	.75
Outing, New York; monthly	3.00	2.20
Review of Reviews, New York; monthly	2.50	
St. Nicholas, New York; monthly	3.00	2.65
Table Talk, Philadelphia; monthly	1.00	.85
Youth's Companion, Boston; weekly	1.75	1.35

The foregoing list includes a number of papers devoted to horticulture and floriculture, live-stock and poultry breeding, as well as a few of a literary, domestic, and juvenile character; and at least one of each class deserves a place in every farmer's home.

A Scientific and Practical Farmer.

Mr. T. B. Terry, of Hudson, Ohio, is, perhaps, as well known as any farmer in the Northern States, through his writings in the agricultural papers and his lectures on agricultural topics before farmer's institutes in many States. Being a practical farmer, each season finds him in his field at work. He is not an orator, but his talks from the platform attract attention for the reason that he speaks from personal experience. and has something new to say that is worth remembering. His farm is situated about two miles south of the lovely village of Hudson.

I think that no one engaged in farming has ever visited his farm without carrying away with him many valuable suggestions and object lessons for future use. The farm is small, containing not over sixty-five acres. Mr. Terry's talents and energies are devoted to the cultivation of those things which his soil is adapted to. His work is not spread out in an effort to raise a great variety of crops, to carrying on a dairy, etc., which has made many a farmer's life a burden with too much work and worry. This farm lies on both sides of a well-traveled country road. His elegant two-story residence is on the north, and his model bank barn is on the south side of the road, but not opposite the house, so that the pleasant view from his front veraudah is not obstructed. The country road is nicely graded and graveled, similar to roads in public parks. The sides of the road are free from stumps, sticks, stones, bushes, and weeds, and the grassy sod would do credit to many a lawn. The entrance to his barn is also nicely gravelled. Grass grows even with his barn along the road, and is kept short with a lawn mower, so that even your shoes need not be soiled by walking about his premises.

Mr. Terry's specialties are few; viz., potatoes, wheat, berries, and clover, and these crops are systematically alternated. This farm he has brought up from a once run-down, non-productive place to a model and highly productive one. Each year it seems to grow better which cannot be said of many farms. The neatly-graveled walks, well-kept lawns, ornamental shrubs, and flowering plants,—in fact, the whole contour of the farm, impresses one that it is the home of a tasteful, prosperous farmer. The lesons which he has taught have not been lost upon his neighbors. They have met him on both sides of his farm, and have carried along the improvements and good roads. (Please note what influence for good the example of a careful, painstaking farmer carries with it).

Mr. Terry is a firm believer in making farming as easy as possible, and has called to his assistance much of the late improved machinery, such as potato diggers, planters, sulky ploughs, cultivators, drills, harrows, hay gatherers, manure spreaders, etc., none of which are allowed to stand in the fields. When he is through using them they are cleaned and placed at once in the tool house. Each harness has its special closet, with doors to exclude dust and dampness. His hoes, rakes, forks, spraying machine, and other tools have places assigned them where they can be found, if necessary, in the dark. Early each season he provides one or more extra tools of each kind, so that in case of breakage he need not lose a half day's time going to town for a new one. (This point is also worth a moment's reflection by many farmers.)

The manner of taking care of his wheat struck me as quite novel. In the annex to his barn, on the second floor, 25x35 feet, he has placed his stock of last year's wheat in new bags, each bag containing two bushels. These bags stand close together side by side in straight rows extending nearly the length of the room, with about one foot space between the rows. A mouse has no chance to escape from a cat in these long runways. A little loose wheat is left in the corners of the room for mice, if they should get in. The bags are never molested, the wheat keeps dry and free from vermin and mould. When ready for market it is loaded from a trap door to a wagon on the floor below. His working horses are fed entirely on clover the year round, only the carriage teams being fed grain, and that is principally wheat.

No fertilizers are used on the farm, Mr. Terry having tested thoroughly various kinds and come to the conclusion that they are in the main without value. He therefore depends on turning under a good crop of green clover and on the manure from his stable. The horses are bedded with all the wheat straw they can stand on, and the extra straw and other loose material about the farm find their way into the manure heap.

Mr. Terry believes that the best results are obtained by working only ten hours each day and six days each week. This rule applies to himself, his family, his hired help, and his horses. All of the work which remains undone at six in the afternoon is deferred until the morrow. He insists that more labor can be done each season in ten hours' time each day than if the work were extended to fourteen hours, and that nothing but loss can result (leaving out the moral obligation) from working on the Sabbath. Being of a social disposition, he takes pleasure in entertaining visitors, and also in taking his family in his carriage on pleasant evenings to call upon his friends, all of which give him zest for his next day's work.

In reply to an inquiry, "How can you find time to make roads and to attend to other improvements?" he replied: "I do not loaf around saloons or stand on street corners or in grocery stores talking politics. I do my work systematically day by day, and find time to read and write. I do not try to raise everything that grows on the face of the earth. I cultivate only so much land as I can farm well, and no more. I keep ahead of my work and never allow it to crowd me."

Mr. Terry raised from 4,000 to 5,000 bushels of splendid potatoes last season. He keeps them in the basement of his barn, in a rat, vermin, and frost-proof cellar, with smooth cemented floor and windows darkened. A wooden shovel is used to place them in wooden bushel boxes when he ships them in the spring. His entire crop was sold before digging. The potato beetle and blight made it profitable for him to raise potatoes, for he knows what to do with each, while many farmers who read little and do not keep abreast of the times often lament a failure of this crop. Mr. Terry has neither time nor desire to pick and market small, inferior strawberries, and to avoid doing so his beds are allowed only one season to bear, when they are plowed up to give place to some other crop. Through his liberality many a basket of the choicest berries find their way into the homes of those not so fortunate as to raise them.

Last November it was worth miles of travel to visit his wheat field. The lines of growing wheat which ascended the sloping hills were as straight as an arrow, and the stand was as regular and even as if the seeds had been planted one by one by hand. Just across his line fence I noticed a field of wheat on the same kind of soil, same kind of seed, and planted the same day with a liberal use of fertilizer, which looked well and was of the same good color, but scarcely one half as thrifty as that planted on clover sod. In a few concluding words I will add that Mr. Terry's success lies along this line. He is a specialist. He raises only potatoes, wheat, berries, and clover, with crops alternating. He farms only the amount of land that he can take care of with the assistance of improved machinery, and do it well, without neglect or worry. The experiences of each season are carefully noted, and the success or partial failure of crops is remembered and placed to a good account the following year.— *A. P. King, in New York Tribune.*

Farming, Good and Bad.

The "good old times" of go as-you-please farming are past; a new era has been inaugurated, in which skill and intelligence take, to a great extent, the place of brawn and muscle held under the old-time regime.

The pioneer farmer of fifty years ago entered the primeval forest with his axe, hoe, and shovel-plow, and perhaps an ox-team, and by main strength cleared off the timber and in this clearing planted corn and potatoes. Science and intellect were small factors in this primitive work; physical prowess was at a high premium, and the farm-laborer's value was gauged by his ability to split rails and fell forest trees. Rotation of crops was little thought of, and less practiced. The virgin soil, shaded for centuries by the forests and mulched by the falling leaves, was rich enough to produce many successive crops of corn, wheat, or oats. Little need was there of careful cultivation; a shallow skimming with the plow and once or twice going over with the old V-shaped "drag" prepared the seed bed, and hoeing a time or two completed the cultivation of the crop. Such surplus as was raised found a ready market in the neighborhood, and the demands of the country at large, or of foreign lands, cut little figure in the calculation of the farmer west of New York forty or fifty years ago.

Gradually, however, conditions have changed. The forests have disappeared to a great extent, and with them the rail fence, the crane, andirons, and the great backlog that burned so brightly in the gigantic old fireplace. They are only pictures now in our memories, seldom thought of except, perhaps, when we encounter the old candlestick that held the tallow dip when we were boys or girls, or come across the ancient camphene lamp in rumaging some old garret.

There are those who regret the change, but view it as we will, it has come and we must accept the inevitable. The boy who sets out to become a farmer now must have a college education; that is, he must take a course at one of our agricultural schools, or he will be unable to achieve success in his calling. He has problems to deal with which his ancestors knew little about. The first of these is how to restors to the soil he is to cultivate the elements of fertility his father and grandfather robbed it of. He will soon learn that their methods were wrong. and he must employ new and better ones, or he will be left behind in the race wherein only the fittest survive. As time goes on, our young farmer will also learn that his ancestors were most profligate in the feeding of their flocks and herds, nor did they rightly estimate the value of shelter and temperature. He will find their methods in this respect were so wasteful that he must abandon them entirely and pursue more scientific ones or he will become a loser each year, and his losses will increase as the science of feeding advances. The wide-awake young farmer will discover also that in dairying his forefathers were quite as wasteful as in feeding, and here, too, he must be in rapport with the times or this part of his business will become a serious loss. In his poultry yard the same condition of things will confront him. He will soon discover that there are thousands of shrewd business men engaged in this line, and only those who plan the business aright and work along the lines science has proven to be profitable, his broilers, eggs and possibly his capons will cost him too much to realize a profit on them.

In every department and branch of farm industry our young men will find great room for improvement, and in one and all he will find the profits to be in exact proportion to the degree of science employed in that particular line. He will find that the present wants of farmers are in a large degree due to the waste that has characterized the farming of the last half century in the west.

To the farmer who is a careful observer and who employs only scientific methods, it will soon become apparent that there is a sufficient margin of profit, even at present prices, in growing potatoes, corn, vegetables, and fruits, large and small, to not only make a fair living on 40 acres of land well located, but to pay for the most improved machinery as well; and that his dairy and poultry yard properly utilized will yield sufficient revenue to pay off the interest on a moderate-sized mortgage and leave something to apply on the principal. Then he will have his pigs and an occasional colt or steer left to supply funds for special requirements.

The farmer who makes a success of his business today must be thoroughly systematic and watch his business as closely as does the merchant; he must keep accounts just as accurately. He cannot be content with guessing at the cost or at the profit he realizes on any of his work: he must know to a certainty what he makes or looses by each transaction, just as the merchant or manufacturer must. Guesswork will ruin him. He must be accurate in his calculation, scientific in his methods, and fully awake to the progress that is being made in his lines of work. Agriculture has no more use for either the sluggard, the dunce, or the antiquarian.—*The Clover Leaf.*

A proper step has been taken in the enactment of a law in this State making the hazing of a college student a criminal offence. Too long college students have considered themselves superior to laws and entitled by their connection with institutions for higher education to immunity from punishment for offences that would subject an ordinary citizen to pains and penalties. There never was a more mistaken notion, and we are glad to see that our Legislature has passed a law which raises hazing from a boyish peccadillo to its true character as a crime.—*New York Tribune.*

It would be an interesting and profitable study to note the effects of low atmospheric pressure upon the vital statistics of a large community. There may be no facts to prove it, but it seems probable that the death rate is greater during the prevalence of low pressure. This is a question worthy of inquiry and experiment by physicians and superintendents of hospitals. If this hypothesis is established, it would indicate the need of extra care and watchfulness during the periods of greater danger.

No one should question the value of eggs as a paying business. The few fowls that a farmer keeps, and on which he spends but little, pay best of all his farm live stock. But when attention is paid to fowls, and they are properly fed and housed, after deducting the cost of keeping, care, interest, etc., from the amount for which their eggs sell, there is in nine cases out of ten a large balance to be found on the credit side of the ledger.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

SPRING TERM ENTERTAINMENTS.

The "Ag" Party.

The evening of May 31st brought with it the long expected "Ag" party. Happy and light were the hearts of many Sophomores as they wended their way to the fairy-like home of Prof. and Mrs. Georgeson. Though the College walks had been traveled so often before, yet they never seemed more beautiful than on this evening. The lawn was well lighted with Japanese lanterns, and dotted with white dresses, both of which added to the attractiveness of the scene. As we entered the home of our host and hostess, we were greeted by sweet strains of music from the College orchestra. As usual, games came next on the program. These were numerous, and participated in by all until about ten o'clock when delicious refreshments were served, after which the exchanging of names on Japanese napkins was the principal entertainment. At a late hour the crowd dispersed, pronouncing the party a success and Prof. Mrs. Georgeson and Mrs. Kedzie the very best of entertainers.

F. R. P.

The Spring Term Social.

Another of those festive occasions, the Spring Term Social, has come and gone. At the usual hour the guests assembled in the Chapel where they were entertained with music, conversation interspersed, until the curtain raised and the ladies of the Calisthenics Class gave a very skillful performance with Indian clubs.

A turning pole was then brought in, and upon this the Athletic Club tried their skill. To the uninitiated their limber jointedness seemed quite impossible.

The ladies closed the entertainment with a very graceful calisthenic exercise.

The remainder of the evening was spent in a social way and all seemed to enjoy it in spite of the dashing rain outside. Those who had not left before the rain were compelled to remain after the usual half past ten alarm. Hacks were sent for, and before the last load left the hill the clock in the President's office said "half past eleven"—an precedented hour for a College social.

P. C. T.

Another Fourth-year Party.

The Class of '94 assembled last evening, probably for the last time as a class, at the hospitable home of Mrs. Winchip, in response to a kind invitation from Mesdames Winchip and Kedzie. From the trees in front of the house hung Chinese lanterns which threw a soft, mellow light upon the lawn, presenting an inviting scene as an introduction to the bright views within, glimpses of which were seen through the windows before entering.

The first part of the evening was spent in general conversation and making of daisy faces representative of the faces of the Fourth-years and Faculty since the ball game. The Fourth-years' faces, of course, wore a triumphant smile, while those of the Faculty had a very depressed and dejected expression.

Cards, which had been cut in two in different ways, and upon which were verses about some animal, were distributed to the ladies and gentlemen. The pieces of cards were then fitted together, and the holders were to draw the animal upon a blackboard, and the remainder of the company guess what it was intended to be. Some of the drawings were surely works of art, even if it did require a stretch of the imagination to recognize them.

We were uniquely paired off for refreshments. Flowers were passed to each person, there being two flowers of a sort; these were matched, when very nice, dainty refreshments were served. After lunch all joined in singing a number of well known songs, and at a late hour the class started for home thanking their kind hostess for a very enjoyable evening.

I. R. F.

The First-Year Assembly.

On the first evening of summer the First-years, about seventy-five in number, met at the residence of Prof. Walters, just at the foot of the hill north of the city, to enjoy a pleasant evening. The lawn was beautifully decorated with Japanese lanterns, thus affording much pleasure to the jolly crowd. Games too numerous to mention were indulged in, after which refreshments were served. In the meantime we were entertained by music on stringed instruments by members of the class. The program for the evening was then rendered in the best possible way. The Class was seated on the lawn, and in order to show the Professor how skilled we were in music, we all joined in singing America, sounds of which were carried over the hills where they echoed and re-echoed for sometime. The impersonation by Will Coffey afforded great amusement for the crowd, and was very comical in his imitation of the colored preacher. Jesse Norton did the Class and himself justice by giving a "Bray Toast" to the Class. He told the truth when he said "there are no flies on us." It was witty throughout, and he well deserves the hearty congratulations of all. Gertrude Lyman gave the toast to the host, to which Professor in his response gave us a hearty welcome, and said he hoped we would all meet with him again when we became Second-years.

The program was interspersed with music given by Hilda and Ida Walters on mandolin and guitar. During the evening we had a chance to guess at the number of beans in a bottle. The exact number of beans was eight hundred and thirty. The guesses varied widely, Mr. Yeager guessing eleven thousand eight hundred and ten and Georgie Brooks guessing eight hundred and fifty. Prof. Walters then presented the two with blue prints certifying that they were now members of the order of the Ancient Brotherhood of G. G. (Great Guessers). We then retired to our several homes, pronouncing Prof. Walters and wife royal entertainers, and ever will their daughter Ida be remembered as a "star" in the Class.

G. L.

The Faculty—Fourth-year Ball Game.

Yesterday probably witnessed the most exciting game of ball that has been played at College for years. At 3.30 when the game was called there was present a crowd of over five hundred, all intensely interested. Owing to the fact that the Fourth-years had never won a game since entering College, and that the Faculty had an unusually good team for them, a great many expected to see the latter win, and numerous were the dishes of ice cream that were lost. From the time the game commenced till it closed the yelling was almost deafening; in fact, there was so much noise that the coacher's voice was entirely drowned in the uproar, and the runners had to use their own judgment a greater part of the time. The game commenced with the Faculty at the bat. They succeeded in making three scores, which set the crowd almost wild; the Fourth-years making but one run. The Faculty remained ahead until the end of the third inning, when the Fourth-years led by one run. Breese wore himself out in the box, and Marlatt was substituted at the end of the fifth inning. The game remained about even until the last inning. The score was a tie when the Fourth-years came to bat the last half of the seventh inning, but evidently the Faculty "lost their grip," allowing twelve runs to made which closed the game.

THE SCORE.

FACULTY.	A.B.	R.	FOURTH-YEAR.	A.B.	R.
Breese, p. and s.s	5	2	Jones, p	6	3
Jones, 2b	5	2	Sandt, c	6	3
Sears, 1b	5	0	Scheel, s.s	6	5
Hitchcock, l.f.	5	2	Donaven, r.f	6	4
Thompson, c.f.	4	2	Frowe, 2b	6	2
Marlatt, s.s. and p.	4	1	Timbers, c.f.	5	2
Otis, c.	4	3	Staver, 3b	5	1
Nichols, r.f.	4	1	Pope, l.f.	5	2
Mayo, 3b	4	0	Stingley, 1b	5	3
	40	13		50	25

	1	2	3	4	5	6	7	
Faculty	3	1	0	5	1	0	3	— 13
Fourth-year	1	1	3	6	2	0	12	— 25

Both sides played hard and both made a number of good plays. Neither party being professionals, of course the score ran up, but even if there were some bad plays, the game furnished plenty of amusement for the spectators and instruction for the professionals who were in the crowd, as many were the close plays and fine points to be decided.

The umpires were H. E. Ashbrook and W. E. Smith.

E. L. F.

Commencement Program.

SUNDAY, JUNE 10.

Baccalaureate Sermon at 4 P. M., by President Fairchild.

MONDAY, JUNE 11.

Examinations from 8:20 to 3:10 P. M.

Address before the Literary Societies, "The True Specialist," by Dr. W. A. Kellerman, Ohio University, at 8 P. M.

TUESDAY, JUNE 12.

Examinations from 8:30 A. M. to 12:10 P.M.

Class Day exercises for invited guests of Class of '94 at 3 P. M.

Annual Address, "Present Day Reforms," by Hamlin Garland at 8 P. M.

WEDNESDAY, JUNE 13, COMMENCEMENT DAY.

Graduating Exercises at 10 A. M.

Military Drill at 4 P. M.

Public conveyance to and from the College in connection with all exercises.

Dinner on Wednesday, served in Armory Hall, by the ladies of the Congregational Church.

GENERAL LOCAL NOTES.

The College Ball Club went to St. Marys on Saturday last to play the Academy boys, but the score of 21 to 1 in favor of the sturdy young Irishmen would indicate that our boys failed to amuse them. Our club cannot understand why and how they got even their single tally.

Nearly 2500 Commencement invitations have been issued.

A large number of students attended the Decoration Day exercises at Fort Riley.

State Architect Davis paid a visit to the new building and the steam plant on Wednesday.

Mr. Sears is again at his post "a well man," as the patent medicine advertiser would put it.

Prof. E. B. Cowgill, editor of the *Kansas Farmer*, made a brief business visit to the College Thursday morning.

The rains have brought out the grass in pasture and lawn, and with continued cool weather a fair crop of hay will be harvested.

Mr. Chas. Damon of St. Louis, owner of a large farm in Ellsworth County, Kansas, called at the College on Thursday morning to look over College stock with view to purchase of a young Hereford bull.

Rev. R. J. Phipps of Manhattan is in charge of a State examination in progress this week at College for the benefit of graduates. This arrangement is made by the State Board of Education under the law of 1893.

The new Library and Agricultural Science Hall will be open to visitors on Commencement day, June 13th. Although incomplete, it will be in such condition as to show the general arrangement of rooms, and adaption to their various uses, as well as to the character of the finishing.

The sixth annual report of the Experiment Station, for 1893, is just published. It contains some interesting figures which are embodied in three tables. The first shows the rainfall, including melted snow, for thirty-six years from 1858 to 1893 inclusive. Each month is divided into periods of ten days as far as possible. By it we find that the least rain fell in 1860, the amount being 15.17 inches, while in the year 1876, the rainfall was most, amounting to 45.86 inches. Table No. 2 shows the mean temperature for each of the ten-day periods, the temperature being highest in the second decade of January, when the mean reached 23.16 degrees, and highest in the second decade of July, when the mean reached 78.70 degrees. Table No. 3 combines the rainfall, mean, maximum, and minimum temperatures, the object of this arrangement being to enable a comparison to be made between the rainfall and temperature. The tables were prepared by Prof. Nichols.

GRADUATES AND FORMER STUDENTS.

A. B. Kimball, '89, is taking the examination for State certificate this week.

Inez Avery of Wakefield, a former student, visited College and old friends Thursday.

G. W. Waters, '86, called at the College on Monday, introducing Mrs. Waters to his old friends here.

Eusebia Knipe, '90, was visiting College yesterday. The past year she has been teaching in the City Schools.

Mrs. F. R. Elliott and her sister, Mrs. Hughes of Arkansas City, attended chapel exercises yesterday morning.

May Guthrie-Moore of Irving, First-year in 1887-8, stopped over on her return from the Topeka Convention, and visited College Tuesday forenoon.

Mayme Houghton, '91, visited College yesterday. Since graduating she has been teaching school, and is now one of Riley County's successful primary teachers.

G. W. Smith '93, is about to enter upon post-graduate studies, having completed his work for the year in the Manhattan schools. He hopes to continue these studies at the College all next year.

W. H. Olin, '88, Assistant Manager in the organization of an excursion party to attend the National Educational Association at Asbury Park, N. J., writes that a chair car has been engaged from the Rock Island Railway Company to run through from Topeka to Asbury Park. At Chicago the car will be attached to the official train on the Baltimore & Ohio Railway. Prof. Olin may be addressed during June at Sedan, Kansas, for further information.

Ben Skinner, '91, is visiting College friends while taking the State teachers' examination. The Fairview *Enterprise* says of Mr. Skinner's work as Principal of Schools: "Mr. Skinner may well feel proud of his school work in Fairview, for the school children have never made such advancement as while under his charge. Now that he retires from school work, it is to be hoped that his successor will be found to be equally as competent and successful in his charge."

COLLEGE ORGANIZATIONS.

May 26th.

The Hamiltons were called to order by Pres. Scheel. F. A. Dawley led in devotion. The program was opened by an interesting as well as instructive discussion by M. L. Heckert upon "Politics." While this gentleman had the floor the merry voices of the Ionians were heard at the foot of the stairs, and in a short time appeared at the door accompanied by Mrs. Kedzie and Messrs. Frowe and Staver. After quiet had been restored, Mr. Holland gave a declamation on the "Declaration of Independence." Mr. Smith followed in a well-written essay, "The work of this college year." The debate upon the question, "Resolved, that labor organizations are a detriment to the

country," was championed by C. R. Hutchings on the affirmative, with G. W. Findley as assistant, and on the negative by W. H. Painter and C. E. Pincomb. A motion was made to limit the speakers on the debate to one speech each. There were objections to this, and a sharp parliamentary "rag" ensued, resulting in the limiting of the speakers. The Society decided in favor of the negative. At this juncture the Ionians, fearing another "rag," left the room accompanied by the aforesaid persons to visit the nest of the Websters. H. W. Moore read a funny selection entitled "The Bashful Man." The music by B. W. Conrad with his guitar and Mr. Norris with his flute was excellent, and the Society showed their appreciation by encoring them three times. F. A. D.

May 25th.

Sharply at 2:30 o'clock the Ionians were called to order by Pres. Frisbie. The Society united in singing, after which Kate Pierce led in devotion. The program was opened by the Oracle, Fannie Cress being the editor. The motto was "To your center do your center circle fill with general knowledge." The principal articles were, "Flowers," "The Popular Girl," "Our Vacation," "A Warning," "Advice," "We Hear." Kate Pierce favored the Society with a pleasing solo entitled, "The Pardon Came Too Late," Elsie Crump accompanyist. Mabel Selby had a very good impersonation, her subject being "The Country School Girl." It gave much pleasure, being well deliver. Ida Walters delivered in a pleasing way one of Samantha Allen's comic productions. Amelia Pfeutze's solo, "Mary Shane," was well delivered, Ida Walters accompanying. Mary Lyman had charge of a miscellaneous quiz. She distributed eighteen printed questions for which she asked the answers. It was a new and pleasant part of the program. Kate Pierce's select reading from Ruskin was especially good, and demanded and received the closest attention. Bessie Selby's pretty vocal solo closed the program. After the usual routine of business, the Society adjourned. M. E. S.

May 25th.

The Alpha Beta Society was called to order by President Kimball promptly after Chapel exercises. R. W. Clothier led in devotion. Geo. W. Fryhofer entertained the Society with a reading of "The Cockney in Gotham." Miss Jennie Ridenour read a very intertaining description of a trip to Salt Lake City. Elsie Water's account of "The Forbidden Curfew," an historical sketch, was attentively listened to. In the absence of the Marshal and Critic J. M. Westgate and Lorena E. Clemons were appointed. Debate upon the question, "Is the present poverty among the laboring classes due to intemperance?" was given by Lorena Clemons and E. A. Powell on the affirmative; Hattie Paddleford and R. W. Clothier on the negative. The evils resulting from drink were forcibly shown; the percentage of the laborers' income spent for drink was shown to be greater than that spent for food, education, and religion combined. The untrustworthiness of drinking men, loss of employment, and consequent suffering were cited. The negative said that cheap labor from foreign countries drives out native laborers, whose higher and more varied needs render successful competition impossible; unwise legislation and wrong administration of government cause dissatisfaction' strike, suspension, and crippling of industries, financial depression, and poverty. The judges, Miss Shofe and Messrs. Rader, and Morgan decided in favor of negative. An interesting number of the Gleaner was read by C. C. Smith. Music, organ solo by T. L. Jones. The usual business, reports, and roll-call were followed by congregational singing and adjourment. L. H. W.

May 26th.

The Webster Society was called to order by President Stingley. J. V. Patten led in prayer. Question for debate was, "Resolved, that the good results from hypnotism exceed the bad." In introducing the affirmative, Geo. Forsyth said that hypnotism had been known in France for a number of years, and used as an anæsthetic. He said it was far superior to chloroform, and was being quite extensively used in many places. In defense, Chas. Cole began by saying that hypnotism is only animal magnetism, and by its use one person could get control over another, and thus bring about his ruin. Many men who understood its effects were using it for their own advancement. In continuing the affirmative, L. W. Hayes said this was a question under discussion by scientists, but because a few bad results had been brought about by some men it did not follow that it was more injurious than useful. J. B. Dorman, in speaking further on the negative, said that in some large places men were made to commit a great crime that they never would have thought of if they had not been under the influence of hypnotism. In closing the affirmative, Geo. Forsyth showed, by giving a few examples, that the many good results exceeded the bad. Chas. Cole said that the old Salem witchcraft was only this animal magnetism. He said that in France, action had been begun against the use of hypnotism. The affirmative won the discussion. F. E. Uhl delivered a declamation, "The American Eagle," which brought forth an encore, and he responded with a medley. During recess our expected visitors, the Ionians, the Alpha Betas, and the Hamiltons arrived. The Society was favored after recess by a banjo and guitar duet. E. H. Freeman read an essay, "The Effect of New Ideas," which was well written and gave us new ideas. E. A. Donavon's subject for discussion was "Has excellence of beauty any connection with excellence of character?" He took the stand that they were in no wise related. "The New Society Halls" were next discussed by E. C. Trembly. The Society took up the question, and all sides were well discussed. The program closed with music by the Webster Quartet.

E. R. F.

Objects.

This College now accomplishes the objects of its endowment in several ways.

First, It gives a substantial education to men and women. Such general information and discipline of mind and character as help to make intelligent and useful citizens are offered in all its departments, while the students are kept in sympathy with the callings of the people.

Second, It teaches the sciences applied to the various industries of farm, shop, and home. Chemistry, botany, entomology, zoology, and mechanics are made prominent means of education to quicken observation and accurate judgment. Careful study of minerals, plants, and animals themselves illustrates and fixes the daily lessons. At the same time lessons in agriculture, horticulture, engineering, and household economy show the application of science; and all are enforced by actual experiment.

Third, It trains in the elements of the arts themselves, and imparts such skill as to make the hands ready instruments of thoughtful brains. The drill of the shops, gardens, farm, and household departments is made a part of a general education to usefulness, and insures a means of living to all who make good use of it. At the same time it preserves habits of industry and manual exertion, and cultivates a taste for rural and domestic pursuits.

Fourth, It strives to increase our experimental knowledge of agriculture and horticulture. The provision for extensive and accurate researches, made by establishing the Experiment Station as a distinct department of the College, offers assurance of more definite results than can be obtained by ordinary methods. The Professors of Agriculture, Horticulture, Chemistry, Botany, and Veterinary Science, together with the President of the College, form the Experiment Station Council, by authority of which experiments are undertaken and carried on in the several departments, under the special supervision of the professors. These touch "the physiology of plants and animals; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable."

The bulletins of the Station, issued at least as often as once in three months, are sent, according to law, free of postage, to all newspapers in the State, and "to such individuals actually engaged in farming as may request the same, and as far as the means of the Station will permit." Correspondence with reference to bulletins and experiments is welcomed, and may be addressed to the several members of the Council.

Fifth, It seeks to extend the influence of knowledge in practical affairs beyond the College itself. For this purpose, farmers' institutes have been organized in more than 40 counties of the State, in which from two to four members of the Faculty share with the people in lectures, essays, and discussions upon topics of most interest to farmers and their families. These institutes, held for twelve years past, have brought the College into direct sympathy with the people and their work, so as to make possible a general dissemination of the truths presented. The members of the Faculty desire correspondence as to farmers' institutes or any questions of practical interest in agriculture or related sciences. The INDUSTRIALIST, published weekly, and edited by Faculty and students, gives a wide circulation to matters of similar interest in the College.

To serve a similar end, a course of thirty lectures is given at the College during two weeks in February of each year, to which farmers from all parts of the State are invited. Members of the Faculty are also prominently connected with State associations for the promotion of agriculture, horticulture, the natural sciences, and education in general.

Labor and Earnings.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour's daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their ability and means.

All labor at the College is under the direction of the superintendents of the department, and offers opportunities for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with the services rendered, from 8 to 10 cents an hour. The superintendents strive to adjust their work to the necessities of students and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay roll for the past year ranges from $250 to $400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses.

The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

Iowa has passed a law compelling her farmers to eradicate the Russian thistle. Laws for the destruction of all kinds of weeds would aid the farmers. The farmer who allows weeds to grow and mature seeds is a menace to the community, and entails expense on all who adjoin him.

Library.

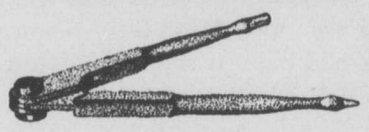
The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

A NEW BLACKBOARD COMPASS.



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All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary

ONE-CROP FARMING.

BY J. E. PAYNE, '87.

THE inventive genius of man during ages past has made all dwellers on earth neighbors. It has bound them with iron bands into one dependent brotherhood. It has made the great old-time wars improbable, if not impossible, by making the interests of all climes common.

Fast-running trains and swift steamers not only make all the people of the earth neighbors, but by these means they are also enabled to compete with each other in supplying the wants of the world; and it is the tendency of Anglo-Saxon civilization to make all people want more and more of a variety of the products of the world as time goes on. We find a greater variety of foods in our markets than we did a few years ago. Twenty years ago, Kansas merchants sold very little oat-meal, but now oat-meal is used in nearly every home. When the boys went to see the circus fifteen years ago, they would go to the bakery to get lunches of Lincoln pie, cakes, etc., but now they can go to the fruit stand and buy a lunch of tropical fruits for the same money. The foods of different climates now come into competition with each other, and the banana is in a fair way to drive out the sandwich. Dried bananas compete with Yankee dried apples in the London markets, and South American beef compels the Texas cow-boys to change their business or move.

Under our present system, the supplies which can be cheapest placed in market at the centers of population will rule the price of those products in their respective lines.

One of the chief factors in production is the cost of the necessities of the laborer. This tempts the great brotherhood of man to play a game of "cut-throat,"—each trying to buy the products of others as cheaply as possible while selling his own at the highest market price. This also tempted English capitalists engaged in manufacturing to invest in large cotton plantations in India and Egypt, "Bonanza" wheat farms in Dakota and British America, sheep stations in Australia, and immense cattle ranches in Argentine Republic. With cheap transportation, they knew they could lower the prices of necessities and then cut down the wages of their operatives without impairing their usefulness as machines. These manufacturers could then compete successfully with manufacturers in other countries where low prices of necessities is looked upon by the laborers as meaning the satisfaction of wants besides those created by mere physical existence.

The bonanza farms are nearly all devoted to special products as wheat, corn, wool, cotton, beef, apples, coffee, and such others as admit of culture in extensive areas. When men engage in special farming on a large scale, they learn to figure very closely on the price of every article which enters into the price of the crop. Superintendents and foreman are engaged who know the details of the business, and who can make everything work out according to calculations, so far as in man's power. They know that wheat can be raised in India and in Canada for ten cents per bushel; that cotton can be raised in India for two cents per pound; that beef can be produced in Argentine for three-fourths of a cent per pound, live weight.

When these products come into competition with the beef, wheat, and cotton of other lands where it is impossible to produce them so cheaply, the farmers are tempted to quit raising those products and raise only such as do not enter into competition with them, and such as they can produce cheaper than they can be raised anywhere else.

But suppose that this tendency becomes general. Then, if it is pursued to its legitimate end, the whole world will be devoted to special farming, each section producing the crops which can be produced there cheaper than anywhere else in the world, and each man depending upon his one product to supply all his wants. The results of this system might be delightful for a time, as it might give:—

1. Cheaper food and clothing to all the world.

2. Each man employment in a special line of work for which he is fitted by training and it may be by choice.

But the final results, it seems to me, would be:—

1. All people dependent.

2. Machinery used in the place of men, even more than at present.

3. Land owned in large tracts, leaving a large majority of people landless and homeless.

4. The landless congregated in towns.

5. All work done by a class of people dependent on the will of the land owner.

6. Education of children of laborers neglected.

7. The masses having no homes would lack patriotism.

8. Laborers would be employed for only a portion of the year.

9. Competition for work so fierce that wages would go down to starvation prices.

10. Laborers expected to be grateful to men who give them work.

11. Manufacturers, merchants, and others in trade would have no respect for the individual laborer, as his trade is worth but little and is likely to be controlled by his employer.

12. The small farmer who maintains his independence would be thought of as a "poor man who tries to hold himself above his 'equals' and ape his betters."

13. Land-owners and laborers would soon come to regard each other as natural enemies, to be cheated in every way possible.

14. The capitalist would not recognize any country as his, but would say "The world is my home, and to accumulate property is my religion."

15. The soil would become practically exhausted, and would soon fail to produce enough to support the population, and then would come the "struggle for existence" when those who get the food live and others must starve.

These conditions, or many of them, may now be found in Sicily and England, and the system of special or "bonanza farming," has not been in vogue in either place; but only one of the conditions named has obtained viz., the concentration of land ownership. In the southern states of this country the cotton planters have practiced "special farming" on a large scale until they have worn out nearly all the land which has been used that way, and "ten generations of niggers." They now want to sell their large farms in small tracts of five or six hundred acres each.

On the other hand, if the people who now own free homes recognize the tendency of the times, and do not wish the world to get into the condition described, they will change their system of farming so as to produce food and clothing cheaply without specializing. They will carefully limit their wants, as nearly as possible to the products which can be produced on their farms. Then the surplus may be sold, and the price will cut a very small figure, so long as the family makes the farm a true home and makes the care of its individual members its only purpose, instead of thinking more of the Poland-Chinas and Short-horns than of the children.

TUBERCULOSIS AMONG CATTLE.

BY PROF. N. S. MAYO, D. V. S.

RECENT reports of the destroying of whole herds of noted highly bred dairy cattle in the Eastern States, because of the presence of tuberculosis, coupled with the increased interest taken in the relation of animal diseases to the public health, have served to bring this disease prominently before the public.

Tuberculosis is what is commonly known as consumption in the human family. It is a germ disease. The germ, bacillus tuberculosis, was discovered by Dr. Robert Koch, in 1882, and the real nature of the disease made known.

Consumption, or tuberculosis, is the most serious disease the human family has to contend against. One-eighth of the total population dies from it. One hundred and twenty-five thousand people die annually in the United States from consumption, or tuberculosis.

This disease has been known to exist to an alarming extent among highly bred cattle for a number of years past, by those who are familiar with them, but, because of the interests involved, there has been a tendency to hide its real importance. Recently, several States are making efforts to stamp out the disease, especially among the dairy herds, because of its relation to the public health. Tuberculosis is a very insiduous disease. The germs usually attack the lungs or lymphatic glands of the body, causing slight inflamation and the formation of small fibrous bunches. These little bunches, or tubercules, usually degenerate into a cheesy mass, and finally into pus, or matter, which, in case of the lungs, may be coughed up, and as this pus contains the germs of the disease, an affected animal may thus sow the germs wherever it goes. Not only is it an infectious disease, but it is also

hereditary, many calves being found affected with the disease at birth. Whole families of fashionably bred cattle are often affected, probably through heredity.

Tuberculosis is widely distributed among highly bred cattle, while it is rare among what may be called native cattle. The reason is pampering and in-breeding, which has been practiced upon the pure-bred cattle to such an extent that it has weakened the constitution so it cannot resist the disease. In New York, Professor Law has found the disease very prevalent among the dairy herds, varying from 5 to 98 per cent. In packing centers among native steers, only .02 per cent are tuberculous. In Great Britain, statistics show that more than twenty per cent of the cows are tuberculous. There are probably few, if any, herds of pure-bred cattle of any size that are free from this disease.

The pecuniary loss of cattle from the disease has, until recently, been very small: only occasionally does an animal die of consumption. They are usually sent to the shambles before the disease has had time to develop, and even after an animal was affected, owing to the insiduous nature of the disease; they were usually slaughtered before death and sent to market. Now they are mostly condemned. The importance of the disease is not from a pecuniary point of view, but on account of the danger to the public health from meat and milk, which contain the germs of tuberculosis.

One of the great obstacles to overcome in dealing with this disease was the difficulty experienced in detecting it. Cattle, sleek, fat and apparently in perfect health, on examination after death would be found to be badly diseased, but impossible to detect by a physical examination. Prof. Koch found that when the germ of consumption was grown in an artificial culture, the germs excreted a poisonous chemical substance. He also found that injecting this chemical substance, called *tuberculine*, under the skin of an individual affected with consumption, there followed a marked rise in temperature. If the individual was not affected with the disease, there was no fever following the injection. This test, called the tuberculine test, has been tried extensively for diagnosing the disease in cattle, and personal experience adds to the gratifying results obtained elsewhere. It proves an almost infallible test. It is to be hoped that proper measures will soon be taken toward the eradication of this disease, especially for the proper inspection of dairy herds—which furnish milk for human consumption—and for the condemnation of tuberculous meat for human food.

Specialties on the Farm.

While farming cannot be successfully carried on in the older sections of the West and on lands that have been in cultivation for a number of years without a rotation which permits of a diversity of crops and some kind of stock growing, which involves necessarily three or four kinds of stock, it does not follow that the farmer should not make a specialty of some one thing; that is, that he should make it the most prominent on the farm. In fact, nearly every farmer does this for a very good reason that his tastes, his education, and his desire for profit leads, and, in fact, almost compels him to do it. Stating the matter broadly, there are some men who have special aptitudes for grain production. These men can grow grain to perfection, while some of them succeed better with one kind of grian than another. It is not often that we find a man who is an expert at grain raising who is also an expert at stock growing. In fact, it is very good to find a farmer who does supremely well in both these lines. If he makes grain growing a study, he is apt to neglect the special attention and work that have so much to do with success in stock growing. On the other hand, it is very seldom that we see a farmer who is noted for his success in handling stock, and especially noted for growing young stock, who is equally noted for his success in growing corn and other grains. It is possible that if his attention were directed equally to these two departments of the farm he would obtain equal success, although we believe the instance would be rare. The reason is that, so anxious is he to do his best with the stock, he is very apt to neglect minute details that are essential to growing the largest crops of grain.

With many farmers who have pronounced ability in handling live-stock, it is not uncommon to see distinguished success in a certain line and comparative failure in another. Some farmers are, as their neighbors say, superb in handling cattle, others in growing calves by hand, while, to use a farm expression, they are "poison" to horses. Other men succeed admirably with hogs, but do not win the largest success with cattle. Other men have "no luck" with sheep, while having splendid "luck" with hogs, or perhaps cattle, or it may be, horses.

It is certainly wisdom for every man to cultivate these special aptitudes for winning success in certain lines, provided, of course, his farm, his markets, and the cost of labor make it profitable for him to do so. In fact, it is almost necessary. We could hardly expect a man who could breed and feed a herd of cows up to the point of producing 300 pounds of butter a year to be as successful in feeding steers, although he might and likely would be quite a successful grower of hogs. Every man works for the best advantage in the line of his special aptitude. If one line be better for him than other lines, this is the line in which he should work.—*Live Stock Indicator.*

Good Road Qualities Desirable in the Horse.

Farmers have one advantage over the regular breeder; they can produce good road horses. Trotting horses have engaged the attention of the large breeders until they know but little about any other class of animals. But buyers know too well that a breeding farm devoted wholly to producing horses with a low track record, are the poorest places in the world to look for good road stock.

Buyers, in these times, want good, shapely horses, fast, and well broken to drive. The track education of a fast colt injures him for use on the road, because he is unaccustomed to the sights and scenes along the way. He is nervous instead of quiet, and keeps his driver on the lookout constantly to prevent accidents.

The well-shaped, moderately fast colt, farm bred, knows everything by the roadside, and doesn't need to be watched every minute. He knows that it pays to jog some of the time, and so is always ready to respond to a request for extra exertion. The track-educated colt wants to spurt, and soon tires himself out by over-exertion, or frets himself out with nervousn ss.

Objects.

This College now accomplishes the objects of its endowment in several ways.

First, It gives a substantial education to men and women. Such general information and discipline of mind and character as help to make intelligent and useful citizens are offered in all its departments, while the students are kept in sympathy with the callings of the people.

Second, It teaches the sciences applied to the various industries of farm, shop, and home. Chemistry, botany, entomology, zoology, and mechanics are made prominent means of education to quicken observation and accurate judgment. Careful study of minerals, plants, and animals themselves illustrates and fixes the daily lessons. At the same time lessons in agriculture, horticulture, engineering, and household economy show the application of science; and all are enforced by actual experiment.

Third, It trains in the elements of the arts themselves, and imparts such skill as to make the hands ready instruments of thoughtful brains. The drill of the shops, gardens, farm, and household departments is made a part of a general education to usefulness, and insures a means of living to all who make good use of it. At the same time it preserves habits of industry and manual exertion, and cultivates a taste for rural and domestic pursuits.

Fourth, It strives to increase our experimental knowledge of agriculture and horticulture. The provision for extensive and accurate researches, made by establishing the Experiment Station as a distinct department of the College, offers assurance of more definite results than can be obtained by ordinary methods. The Professors of Agriculture, Horticulture, Chemistry, Botany, and Veterinary Science, together with the President of the College, form the Experiment Station Council, by authority of which experiments are undertaken and carried on in the several departments, under the special supervision of the professors. These touch "the physiology of plants and animals; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable."

The bulletins of the Station, issued at least as often as once in three months, are sent, according to law, free of postage, to all newspapers in the State, and "to such individuals actually engaged in farming as may request the same, and as far as the means of the Station will permit." Correspondence with reference to bulletins and experiments is welcomed, and may be addressed to the several members of the Council.

Fifth, It seeks to extend the influence of knowledge in practical affairs beyond the College itself. For this purpose, farmers' institutes have been organized in more than 40 counties of the State, in which from two to four members of the Faculty share with the people in lectures, essays, and discussions upon topics of most interest to farmers and their families. These institutes, held for twelve years past, have brought the College into direct sympathy with the people and their work, so as to make possible a general dissemination of the truths presented. The members of the Faculty desire correspondence as to farmers' institutes or any questions of practical interest in agriculture or related sciences. The INDUSTRIALIST, published weekly, and edited by Faculty and students, gives a wide circulation to matters of similar interest in the College.

To serve a similar end, a course of thirty lectures is given at the College during two weeks in February of each year, to which farmers from all parts of the State are invited. Members of the Faculty are also prominently connected with State associations for the promotion of agriculture, horticulture, the natural sciences, and education in general.

Short Lecture Course for Farmers.

Beginning on the first Tuesday of February each winter, a two-weeks course of lectures is given on agriculture and related arts and sciences. This is provided for those farmers and others who cannot take up the fuller work of the regular College classes. Members of the Faculty are assisted in delivering these lectures by prominent farmers, stock raisers, and fruit growers of the State; and full discussions of the topics presented bring out the varied experiences of those attending This course, during the winter of 1893, was attended by about 40 farmers.

Means of Illustration.

Agriculture.—One hundred and eighty-five acres of land used for farm purposes, with hundreds of plats under experiment in grain, grasses, and forage crops; and illustrating various methods of culture and rotation.

A barn 50x75 feet, expressly arranged for experimental uses; and connected with it a general-purpose barn, 48x96 feet, for grain, hay, horses, and cattle. Both buildings are of stone, and are provided with power, and equipped with improved machinery for shelling, threshing, cutting for the silo, and steaming.

Two piggeries—one of ten pens, for experimental uses, and one of six pens, with separate yards for general purposes.

An implement house, 22x50 feet, of two stories, and corn cribs.

Shorthorn, Aberdeen-Angus, Hereford, Holstein-Freisian cattle; Berkshire and Poland-China swine; and Shropshire sheep.

Farm implements of improved patterns.

Collections of grains, grasses, and forage plants.

Buildings, stock, and equipments are valued at $26,000.

Horticulture and Entomology.—Orchards containing one hundred varieties of apples, thirty of peaches, thirty of pears, twenty of plums, thirty of cherries, and five of apricots.

Small-fruit gardens, with two hundred varieties of small fruits, including blackberries, raspberries, gooseberries, currants, and strawberries; and vineyard, with one hundred and sixty varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties, of from one to twenty-five years' growth.

Ornamental grounds, set with a variety of evergreens and deciduous trees. Sample rows, containing about one hundred and fifty varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames, and experimental beds. Practice rows for students' budding, grafting, cultivating, and pruning.

Two well-planned and furnished greenhouses of three rooms each, stocked with a collection of native and exotic plants.

Museum, containing a collection of woods from American forests, and a large series of specimens in economic and general entomology.

Value of property, exclusive of orchards and grounds, $16,000.

Chemistry and Mineralogy.—Eight rooms fitted with tables and apparatus for a class of eighty students in qualitative analysis, eight in quantitative analysis, including necessary facilities for assaying, with a mineralogical collection and general illustrative apparatus. Value, exclusive of building, $8,200.

Geology, Zoology, and Veterinary Science.—A general museum, well fitted with cases containing valuable collections of mounted Kansas mammals and birds, with mounted skeletons of wild and domestic animals. The largest collection of Kansas fishes and mollusks in the State. Kansas reptiles and batrachians, salt-water fishes and invertebrates, in alcohol. Collections of mound-builders' and Indian relics. Kansas fossils and rocks, typical of the geological ages found in the State.

In veterinary science: A laboratory fitted with apparatus and re-agents, for the study of disease. A collection of charts, models, and anatomical preparations, illustrating healthy and diseased structure. Value, including general museum, $7,500.

Botany.—A general herbarium, consisting of a large collection of plants of the United States and other countries; a Kansas herbarium, containing specimens illustrating the distribution and variation of plants throughout the State; also twenty-eight compound microscopes, four dissecting microscopes, tools, re-agents, etc. Valued at $2,750.

Drawing.—Models, plaster casts, patterns, charts, easels, and implements. The class room is provided with top light, and furnished with twenty-four new Dietzgen patent drawing tables. An adjacent room is fitted up with running water, coating table, ruby light, etc., for blue and black printing. Valued at $2,000.

Physics.—Complete physical apparatus, for general instruction in physics, and meteorological instruments, including a self-recording anemometer. Among the apparatus for special work may be mentioned Coulomb's torsion balance, Kohlrausch differential galvanometer with reading telescope, Deprez-Carpentier ammeter, Ayrton and Perry's voltmeter, Thompson's potential and current galvanometers, Carhart-Clark standard cell, standard legal ohm, Wheatstone's meter bridge, Edelman dynamo. The value of the whole is $1,700.

Mathematics and Surveying.—Transits, plane table, compasses, levels, chains, models, etc. Valued at $1,300.

Mechanics and Engineering.—Carpenter shop, with separate benches and tools for forty-five students in each class, besides lathes, mortising machine, circular saws, band saws, planer, friezer, boring machine, grinder, and general chest of tools for fine work.

Shops for iron work contain blacksmith forges to accommodate at least sixteen; brass foundry of twelve benches and large furnace for brass; iron foundry, with two-ton cupola; machine shop equipped for thirty students, including, besides hand tools, lathes, drills, planer, etc.

Inventory of material and apparatus in both shops, $14,000.

Kitchen Laboratory, with ranges, cooking utensils, dining-room furnishings, dairy furniture. Valued at $200.

Printing Office, with thirty pairs of cases; large fonts of 6-point, 8-point, 10-point, and 11-point Roman type; a good assortment of job type and brass rule; a Babcock cylinder press, a new Liberty quarto-medium job press, a Gordon eighth-medium job press; a mitering machine, a rule-curving machine, and a paper cutter. Value of equipment, $4,300.

Sewing Rooms, with eight machines, models, patterns, and cases; worth $700.

Music Rooms, with five pianos, four organs, other instruments, and nine charts; valued at $1,300.

Armory, containing one hundred and fifty stands of arms (breech-loading cadet rifles, caliber .45), with accouterments; two three-inch rifled guns; also swords, uniforms, etc. Value, exclusive of arms, $1,000.

A Good Education Pays.

1. In dollars and cents. All testimony of statistics agrees in showing that educated laborers of all ranks have better work and better wages than the uneducated.

2. In influence and position. Careful estimates make it certain that the chances of promotion to places of trust and power among men are almost two hundred times as great to an educated man as to the uneducated man.

3. In usefulness. The bulk of good work in the world—discovery, invention, government, philanthropy, and religion—is brought about by those who learn to think by study.

4. In enjoyment. Our pleasures grow out of what we are ourselves more than from surroundings. A well-trained man sees, hears, and handles a great deal more of the world than an untrained one. All things do him more good, not so much because he owns them as because he understands them. He always has good things to think about.

Calendar.

1893-94.
Fall Term—September 14th to December 22nd.
Winter Term—January 9th to March 30th.
Spring Term—April 2nd to June 13th.
June 13th, Commencement.
1894-95.
Fall Term—September 13th to December 21st.

To School Officers.

The College Loan Commissioner has funds now to invest in **school** district bonds at par. The law requires that no bonds be **sold** at par or less without being first offered to the State School **Fund** Commissioner and the State Agricultural College. Address **E. D.** Stratford, Loan Commissioner, El Dorado, Kan.

GENERAL LOCAL NOTES.

Mr. and Mrs. Willard, of Wabaunsee, were in Chapel Friday afternoon.

Judge and Mrs. Harper, of the City, attended Chapel exercises Friday morning.

A. G. Cress, father of Alverta Cress, Fourth-year, visited College and grounds Friday afternoon.

George Lechner's sister has been visiting him this week. She was at College Wednesday morning.

F. J. Smith, W. H. Phipps, and Ethel Patten are elected student editors for the Fall Term of 1894-5.

W. M. Wright, '87, of Lake Arthur, La., is visiting at College. He will spend two weeks in Manhattan and vicinity.

Mrs. Preston, of Irving, visited College Wednesday forenoon in company with her sister, Dora Thompson, Third-year.

A. G. Bittman, Second-year, gained first place among ten competitors in the recent examination at Leavenworth for West Point.

A column and a half of local matter, including the weather report and notice of the Friday lecture, was by mistake omitted last week.

Prof. Georgeson lectured last week before the Riley County Farmer's Institute at Manhattan on stock-breeding for the general farmer.

Regent Secrest is nominated by the Populists as Representative from Riley County. The party could not have named a better or stronger man for the place.

Miss Gertie Kline of Kansas City, Mo., visited College Monday with her cousin, Lorena Helder, Fourth-year. She expects to remain until after Commencement.

The ball game on Friday between the Fourth-years and Third-years was forgotten until about time to go to press. The score was 21 to 9 in favor of the Seniors.

Capt. Bolton, with his company of the 23rd Infantry, has been transferred from Old Fort Bliss, Texas, to Fort Clark, Texas, about five hundred miles further down the Rio Grande, where he is at headquarters.

That the various institutions established for the public good in this State are not clearly separated in the minds of the people for whom they work, is shown by the following inquiry which was addressed to "Experiment Station, Topeka, Kans." The writer says "I desire to no Some Thing of the deceased chinch bug, and Whare I could git some."

The Y. M. C. A. has made an extra effort this spring to prepare for the work of the coming year. G. W. Fryhofer, President of the Association, will be sent as a delegate to the Y. M. C. A. National Convention and Bible School at Lake Geneva, Wisconsin, June 22nd to July 2nd. This school is for the purpose of giving new ideas and new spirit to the delegates, who in turn will impart their own enthusiasm to the home association. The convention is in charge of the best talent of the country, and has in connection with it a splendid series of athletic games in charge of Prof. Stagg of Cornell University.

Chapel exercises were opened Friday afternoon, June 1st, by a well-rendered selection by the College Orchestra. Then followed the lecture by Prof. E. A. Popenoe, who had for his subject Charles Darwin. The name of Darwin is usually recognized as synonymous with the theory of evolution. The fact was brought out that Darwin was not the author of this theory, but he was the first earnest advocate of it, and it was by his protracted effort that it was brought before the scientific world and by it adopted. Darwin was described as a quiet, modest man; tender-hearted and kind; a man whom fortune favored by permitting him to lead the life he most desired—a life devoted to his home and to science. The only obstacle he found to contend with was public opinion, which did not readily accept his theories. He died at the age of seventy-three, and the recognition which he should have received before his death has since been turned into fame so wide-spread that even the commoner class of people recognize the name of Darwin as being a name of influence in the educated world.

The members of the Faculty, with their wives, were most agreeably entertained on Wednesday evening at the pleasant home of Dr. and Mrs. Mayo. The guests, after chatting socially for an hour, were paired by matching button-hole bonquets and partook of strawberries, ice cream, and cake. Then the host took up a position in the middle of the room and called upon the guests in turn to read the conundrums written on the cards to which the bouquets were attached. Many were the answers given, in some cases correctly, but as a rule it required a more elastic imagination than any member of the party possessed to fit the hastily made answers to the conundrums. A comparison of the impromptu answers with the original in a sealed slip attached to the card provoked much merriment, but no confusion to the guessers, for each considered his answer more appropriate than that furnished by the conundrum maker! A number of up-to-date conundrums were propounded by the host and guests, some being properly and promptly answered; while at least one good answer—that to "Why wasn't Eve afraid of the measles?" was with held by its modest author for reasons best known to himself.

Mr. Leicester's horse ran away on the College grounds this morning, and the occupants of the buggy, Hilda Leicester, Second-year, Mabel Crump, First-year, and Miss Leicester's little brother, were thrown out. Miss Leicester's right wrist was sprained and a bone of the forearm slightly fractured. The others escaped with a severe shaking up and a few scratches.

The seventh division, Third-year Class, occupied the Chapel rostrum Friday afternoon with orations as follows: W. E. Thackrey, "Our Work;" F. J. Smith, "Liberalism;" Olive Wilson, "A Second Uncle Tom's Cabin;" E. C. Trembly, "A Scheme of Taxation;" Frank Yeoman, "A Liberalist;" Ora Yenawine, "Solitude and Society;" Ed. H. Webster, "A Chance for the American Boy;" G. C. Wheeler, "The Laying of the Atlantic Cable;" May Willard, "The Influence of Public Opinion;" J. B. Harman, "Farming as an Occupation." Music was furnished by the Orchestra, Mandolin Trio, and Glee Club.

GRADUATES AND FORMER STUDENTS.

Laura Day, '93, visited College Friday.

Nora Newell, '93, renewed old acquaintances Friday afternoon.

Effie Gilstrap, '92, has just printed a neat volume of Class Letters.

Mayme Houghton, '91, was among the visitors in Chapel Friday afternoon.

J. Sidney Gould, from Wabaunsee, Third-year in 1888-9, visited Chapel yesterday afternoon.

Inez Manchester, in First-year Classes, is compelled to drop out of College on account of weak eyes, the result of the measles.

H. N. Whitford, '90, was awarded first prize in the Washburn College Oratorical Contest. His subject was "Dr. Jekyll, and Mr. Hyde in the Nation."

H. W. Jones, '88, visited Chapel Tuesday morning, and renewed old acquaintances about College. He has spent the past year as principal of the Alma schools.

Callie Conwell, '91, and J. B. Thoburn, '93, were married at the bride's home Wednesday morning, and left the same day for their future home in Peabody. Our best wishes go with them.

Flora E. Wiest, '91, writes from Wagon-Mound, N. M., of the successful close of her second year as teacher in one of the, schools there. She likes the climate of New Mexico, but she still prefers Kansas for a home.

E. M. S. Curtis, '93, orders his INDUSTRIALIST sent to him at Flagstaff, Ariz., for the following year. He has been sight-seeing for the past month. He is now rooming with John H. Hicks, student here some time in the seventies.

O. L. Utter, '88, acknowleges the receipt of an invitation to attend the exercises of commencement week, and sends his regrets at not being able to be present. He receives the degree of A. B. at Baker University, June 7th, and at once goes to Somerset, Miami Co., where he is pastor of the Methodist church.

SHOP NOTES.

The boilers from the basements of the main building and the shop have been repaired and put into position in the boiler room of the new steam plant. Brackets were put on the one from the shop to support it in its new setting. These with the two new ones received lately form the entire battery to be used for heating and power. The settings are not yet complete, and smoke connection is not yet made. Meanwhile power for the shops is furnished by a small upright boiler which Mr. Ulrich has been kind enough to lend to the Department. It furnishes abundance of power for one shop at a time, but when both are running it requires hard firing.

The last heat of the season is to be run in the foundry this afternoon. This part of the Mechanical Department is one of the most interesting to everyone who visits the College, and is a great convenience to the shops. A few years ago all castings needed had to be ordered from some other foundry, usually in Topeka, but for three years the shop has been turning out its own work of this kind at a small cost and at the same time has furnished instruction to a considerable number of students in the art of founding.

The work in the blacksmith shop by students has been very satisfactory during the term. The same can be said of the machine and carpenter shops. Many samples of student work can be seen which testify to the skill and interest of the workers in what they are doiug.

The shop received last week some fine samples of "boiler scale" from the Santa Fe Shops in Topeka. G. W. Wilden, '92, was the donor. They are interesting as showing the deposits from different waters used at different times during their formation. They are more than one-fourth inch thick.

The Weather for May.

Temperature.—The mean temperature for the month was 64.32°, which is .41° above normal. The maximum temperature was 92°, on the 14th and 15th; the minimum, 30°, on the 20th, a monthly range of 62°. The greatest range for one day was 46°, on the 20th and 26th; the least range, 18°, on the 30th. The warmest day was the 15th, the mean being 79.50°; the coolest day was the 19th, the mean being 50.75°. The mean of the observations at 7 A.M. was 58.35°; at 2 P.M., 76.48°; at 9 P. M., 61.23°. The mean of the maximums was 79.55°; of the minimums, 53.55°, the mean of these two being 66.55°. The mean temperature for the first ten days was 63.48°; second ten days, 66.45°; last eleven days, 63.16°. Normals for the corresponding periods are 60.83°, 63.44°, and 67.45°. The frost on the 20th is the latest killing frost on the records. Considerable damage was done to winter wheat, grapes, and vegetables on low ground.

Barometer.—The mean pressure was 28.831 inches, which is .10 inch above normal. The maximum pressure was 29.214 inches, at 7 A. M. on the 11th, the minimum, 28.383 inches, at 7 A. M. on the 16th, a monthly range of .831 inch.

Relative Humidity.—The mean humidity was 70.57; the minimum, 26, at 2 P. M. on the 20th. The mean at 7 A. M. was 79.87; at 2 P. M., 55.87, and at 9 P. M., 75.97.

Rainfall.—The total rainfall was 3.78 inches, which is .28 inch below normal. Rain fell in measurable quantities on the 1st, 3rd, 4th, 9th-10th, 24th, 28th-29th, 29th-30th. The rainfall for the first ten days was 1.97 inches; second ten days none; last eleven days, 1.81 inches. Normals for these periods are .96, 1.70, and 1.43 inches. The total deficiency of rainfall for the five months is 2.6 inches.

Cloudiness.—There was one day entirely cloudy, two five-sixths cloudy, three two-thirds cloudy, five one-half cloudy, one one-third cloudy, two one-sixth cloudy, and seventeen clear. The cloudiness for the month was 25, which is 21 below normal.

Wind.—The wind was from the north twenty-two times, south sixteen times, northeast, fourteen times, ssouthwest twelve times, northwest eight times, east even times, west six times, southeast three times, and a calm five times. The total miles of wind was 8117, giving a mean daily velocity of 261.84 miles, and a mean hourly velocity of 10.91 miles. The maximum daily velocity was 578 miles, on the 15th; the minimum, 83 miles on the 26th. The maximum hourly velocity was 37 miles, from 3 to 4 P. M. on the 2nd.

Below will be found a comparison with the preceding Mays:—

May.	*Number of rains.*	*Rain in inches.*	*Prevailing Wind.*	*Mean Temperature.*	*Maximum Temperature.*	*Minimum Temperature.*	*Mean Barometer.*	*Maximum Barometer.*	*Minimum Barometer.*
1858	12	5.12	.....	59.95	91	39	.....	.....	.....
1859	12	9.42	SW	65.61	88	42	.....	.....	.....
1860	3	1.13	SW	69.10	97	30	.....	.....	.....
1861	8	3.76	SW	64.46	90	42	.....	.....	.....
1862	8	3.18	N	65.38	89	46	.....	.....	.....
1863	4	3.13	S	68.80	91	48	.....	.....	.....
1864	6	2.29	SW	64.80	89	35	.....	.....	.....
1865	6	2.04	S	67.16	90	32	.....	.....	.....
1866	7	2.83	SW	62.19	90	45	.....	.....	.....
1867	7	3.59	N	58.73	93	41	.....	.....	.....
1868	3	1.38	S	66.08	88	50	.....	.....	.....
1869	8	1.12	NW	59.11	88	43	28.72	29.05	28.30
1870	5	.91	SE	67.63	93	49	28.73	29.00	28.40
1871	7	5.07	SE	65.05	88	45	.....	.....	.....
1872	11	6.81	SW	58.99	90	30	.....	.....	.....
1873	10	8.54	SE	61.84	86	44	.....	.....	.....
1874	7	2.98	SW	68.88	93	40	28.77	29.01	28.11
1875	10	2.46	SW	64.15	98	29	28.71	29.04	28.10
1876	7	5.73	SW	63.84	86	34	28.71	29.02	28.20
1877	13	5.20	SW	64.16	84	31	28.66	28.90	28.24
1878	11	4.06	SW	62.02	85	34	28.66	29.04	28.24
1879	7	1.79	S	68.58	93	40	28.56	28.85	28.18
1880	6	3.74	S	70.40	94	44	28.56	28.88	28.28
1881	14	6.67	SE	68.25	87	46	28.59	28.84	28.22
1882	8	5.20	NW	58.35	86	36	28.59	28.88	28.10
1883	11	4.83	SW	60.74	90	37	28.57	28 94	28.06
1884	5	4.63	SW	61.61	85	35	28.55	28 78	28.21
1885	8	4.30	NE	60.75	86	35	28.57	28.83	28.25
1886	9	4.87	E	69.61	100	42	28.85	29.21	28.38
1887	5	2.54	SW	68.53	99	37	28.85	29 20	28.19
1888	7	2.25	SE	60.16	88	30	28 88	29.19	28.47
1889	7	6.15	.....	63 11	94	30	29.01	29.32	28.53
1890	10	1.81	SW	62.86	92	30	28.79	29 14	28.36
1891	8	4.79	S	60.88	89	30	28.95	29 32	28.50
1892	12	6.62	NW	57.83	90	38	28.74	29.05	28 27
1893	9	5.73	S	60.85	91	31	28.77	29.05	28.25
1894	7	3.78	N	64.32	92	30	28.83	29.21	28.38
Means	8	4.06	SW	63.91	90	38	28.73	29.02	28.28

WIND RECORD.

May.	*Total Miles.*	*Mean Daily.*	*Maximum Daily.*	*Minimum Daily.*	*Mean Hourly.*	*Maximum Hourly.*
1889	9577	308.95	914	42	12.87	44
1890	6122	197.48	547	57	8.23	29
1891	7691	241.10	552	71	10.34	36
1892	10092	325.55	632	95	13.56	46
1893	9192	296.51	597	98	12.35	42
1894	8117	261.84	578	83	10.91	37
Means	8465	271.91	637	74	11.38	46

E. R. NICHOLS, Observer.

COLLEGE ORGANIZATIONS.

June 2nd.

The Websters were called to order at 8 o'clock by Pres. Stingley. After roll-call I. A. Robertson led in devotion. "Resolved, that convict labor is a detriment to free labor," was the subject for debate. S.A.McDowell opened the affirmative by saying that there were over fifty thousand convicts in the United States that labor daily, and in this number there were mechanics, engineers,—in fact, all kinds of trades are represented. He said that in many States the convicts are hired out, work in factories, etc., and that they could afford to work less than the free laborer. Fred R. Jolly in defense said that in places where men were not allowed to work, they soon lost their health, or perhaps their mind. He said that some of the convicts were well educated, and why not let them work. In continuing the affirmative A. E. Fuhlhage said that when hard times came on, the convicts still kept at work, for they would work cheaper, and free laborers would be obliged to stop. R. W. Ashbrook, in speaking further on the negative, said that in many places the work which the convicts did was such that the free laborer would not do. Mr. McDowell, in closing, said that it was impossible for a free laborer to get work in the vicinity of a State prison, owing to the number of convicts. Mr. Jolly, in closing, said it was necessary that the convicts should work in order to aid in their support, for if they were kept idle it would cost a great deal to keep them. The question was won by the negative. The remainder of the program was passed except music, which was given by a ladies' quartet. The music was highly appreciated by the Society, as shown by the hearty applause that followed. Mr. Ben Skinner, an ex-Hamilton, came in during the evening, and gave us an interesting talk. The rest of the evening was spent in parliamentary practice.

E. R. F.

June 2nd.

At the usual hour the Hamilton Society was called to order by Pres. Scheel. Roll-call showed that, although the parties and entertainments of the past week were numerous, yet the Hamiltons are always present for duty. Devotion by S. Robbins. The program of the evening was opened with an interesting essay by J. D. Trumbull, in which he described an Indian dance, noting chiefly the peculiarities of the scene, the surroundings and the amusing interest bestowed by them. W. O. Staver gave an appropriate and interesting discussion on "The fitness of a student for duty after graduating," in which he told why graduates of the K. S. A. C. did not take up farming, instead of teaching school, as so many of them do. Our institution is young, yet the graduates have as good chances as those of other institutions. He closed by advising each and all to stand up for this institution. The Debate, "Resolved, that our country should deal with the liquor question according to the Gothemburg system of Sweden. The affirmative was argued by C. S. Evans and Guy Whitson, who showed why the Government should control the quantity and price of liquors sold, and that it would prevent the laying up of wealth by the saloonists; also that statistics show a decrease of habitual drunkards in Sweden. The negative was argued by O. Bentz and G. Bayless, showing the immorality and degradation of the saloon and advocated immediate national prohibition. The Society decided in favor of the affirmative. A well-delivered declamation on cheerfulness was given by R. M. Philbrook. An oration by E. Emrick, on "Decision," was a splendid production. He referred to Napoleon, Hamilton, and Jefferson as men of quick, accurate decision, and showed by their life that success depended on prompt and accurate decision. The news of the week was given by E. Emrick. R. J. Barnett gave a selection from Bill Nye, which was an appreciable change of humorous ideas. The music was given by Mary and Gertie Lyman, Rena Helder, and Jennie Smith, which was highly appreciated by all, and after extending a vote of thanks to the ladies for their kindness, the Society adjourned.

C. E. P. Sec. pro tem.

June 1st.

The Ionians were called to order promptly on time by the Secretary, Miss Harbord, in the absence of the President. Dora Thompson was called to the chair. The Society united in singing, after which Ethel Patten led in devotion. President Frisbie was called to the chair, and the program was opened by a well-delivered declamation, entitled, "The Temple of Knowledge," by Minnie Copeland. A good edition of the Oracle was presented by Ada Rice as editor. Her motto, "Taxation without representation," gave a hint as to the editors view upon the pending question in regard to the Amendment to our State constitution. The principal pieces were, "Decoration," "Hamlin Garland," a poem; "The Class of '94," "Selfishness," and "How to make life happy." A prety vocal solo by Laura McKeen preceeded the Invective given by Dora Thompson who showed us how much pleasanter it is to look at the good things in this life rather than the bad as she that moment was obliged to. May Moore next delivered a good declamation. Extemporaneous speaking followed upon the subject, "Would the students do better work if they were allowed more privileges?" Both sides of the question were well presented by the speakers Misses Harman, Rice, Pierce, and McKeen. Some thought that the work in this College was such that did us much more good than the work done in places where contests were the principal spurs that urged the students forward that enthusiasm might be aroused in different ways and that the effect would be far more lasting. On the other hand, others thought that our work here did not begin to compare with the work done in the great colleges of the land where contests, were the principal features of the course; that this was just what was needed in this College to awaken the dormant resourcse and that this College would never materially until the student was allowed more freedom. This closed the program, and after the usual orders of the day were passed the Society adjourned.

M. E. S.

Revised Course of Study.

[Numerals denote number of class hours per week. When no work outside of class is required, italics are used.]

FIRST YEAR.

Fall Term..... *14 weeks.*
Algebra, 5.
English Analysis, 5.
Botany, 5.
Free-hand Drawing, 3.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 4.

Winter Term..... *12 weeks.*
Algebra, 5.
English Composition, 5.
Bookkeeping, one-half term, 5. Commercial Law, 1.
Geomtrical Drawing, one-half term, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 3.

Spring Term..... *10 weeks.*
Algebra, 5.
English Structure, 5.
Elementary Physics, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 5.

SECOND YEAR.

Fall Term..... *14 weeks.*
Geometry, 5.
Horticulture, 5.
Inorganic Chemistry, 5. *Laboratory work*, 2.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 4.

Winter Term..... *12 weeks*
Geometry, one-half term, 5.
Projection Drawing, one-half term, 5.
Agriculture, for young men, 5.
Household Economy, for young women, 5.
Organic Chemistry, one-half term, 5.
Mineralogy, one-half term, 5. *Laboratory work*, 5.
Military Science, one-half term, 2.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 3.

Spring Term..... *10 weeks.*
Descriptive Geometry, 5.
Entomology, 5.
Analytical Chemistry, 10.
Military Science, 2.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 5.

THIRD YEAR.

Fall Term .... 14 weeks.
Trigonometry and Surveying, 5. Surveying Practice, 2.
General History, 5.
Anatomy and Physiology, 10 weeks, 5.
Chemistry of Foods, 4 weeks, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Winter Term..... 12 weeks
Mechanics, 5.
Civics, 5.
Zoölogy, 5.
Map Drawing, about 30 hours a term.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Spring Term..... 10 weeks.
Geology, 5.
Rhetoric, 5.
Agricultural Chemistry, 5.
Perspective and *Sketching*, 4.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

FOURTH YEAR.

Fall Term..... 14 weeks.
Physics and Meteorology, 5.
English Literature, 5.
Agriculture, for young men, 5.
Hygiene, for young women, 5.
Object Drawing, 4.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Winter Term..... 12 weeks
Physics, one-half term, 5.
History of Industry and Science, one-half term, 5.
Psychology, 5.
Botany, 5.
Veterinary Science, for young men, 5.
Floriculture, for young women, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Spring Term..... 10 weeks
Political Economy, 5.
Logic, 5.
Engineering, for young men, 5.
Literature, for young women, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

WM. KNOSTMAN, the Clothier, offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry and Gold Spectacles, also Musical Instruments.

E. K. SHAW, Jeweler and Optician. Watches, Jewelry, Silverware, Spectacles, Clocks, Fountain Pens, Gold Pens, etc. Repairing of watches, Clocks, Spectacles, and Jewelry done promptly and skillfully. A written guarantee given with all warranted watch work. 308 Poyntz Ave

DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

DENTIST.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

SHAVING PARLOR.

6 BATHS, $1.00 cash. 12 shaves, $1.00 cash, Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, South Second Street.

GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

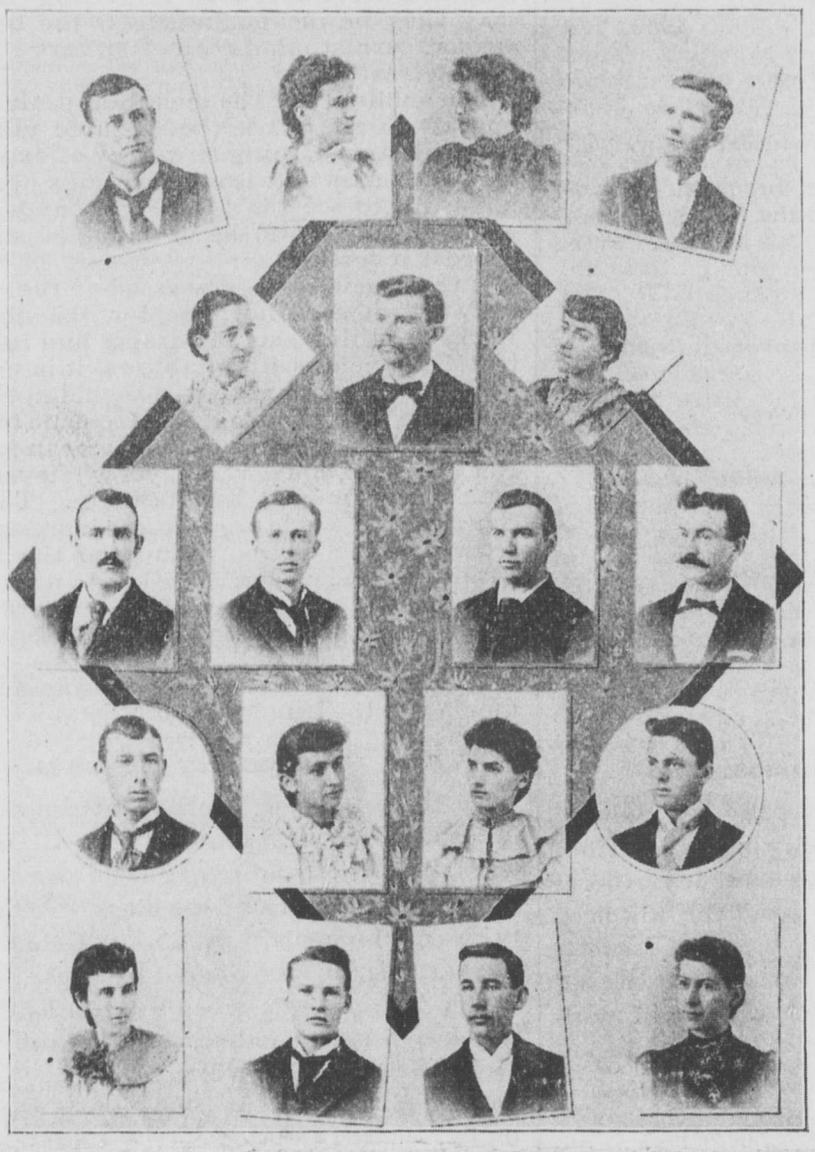
E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

Historical society

THE INDUSTRIALIST.

VOLUME XIX. MANHATTAN, KANSAS, SATURDAY, JUNE 16, 1894. NUMBER 40

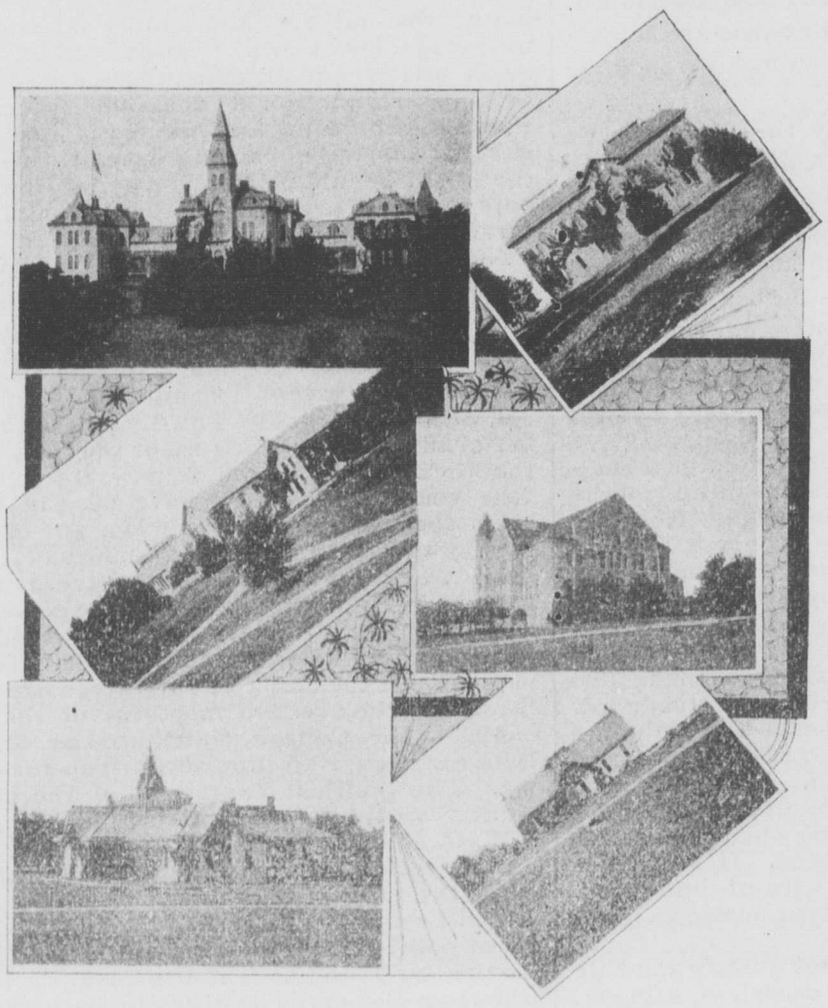
THE CLASS OF '94.



C. R. Pearson. Phœbe Turner. Lucy Waters. John Stingley.
Fannie Cress. John A. Scheel. Lorena Helder.
J. E. Taylor. G. L. Christensen. E. A Donaven. F. W. Ames.
J. W. Evans. Alverta Cress. Stella V. Kimball. E. L. Frowe.
Jennie Smith. J. C. Christensen. J. U. Secrest. Minnie Romick.

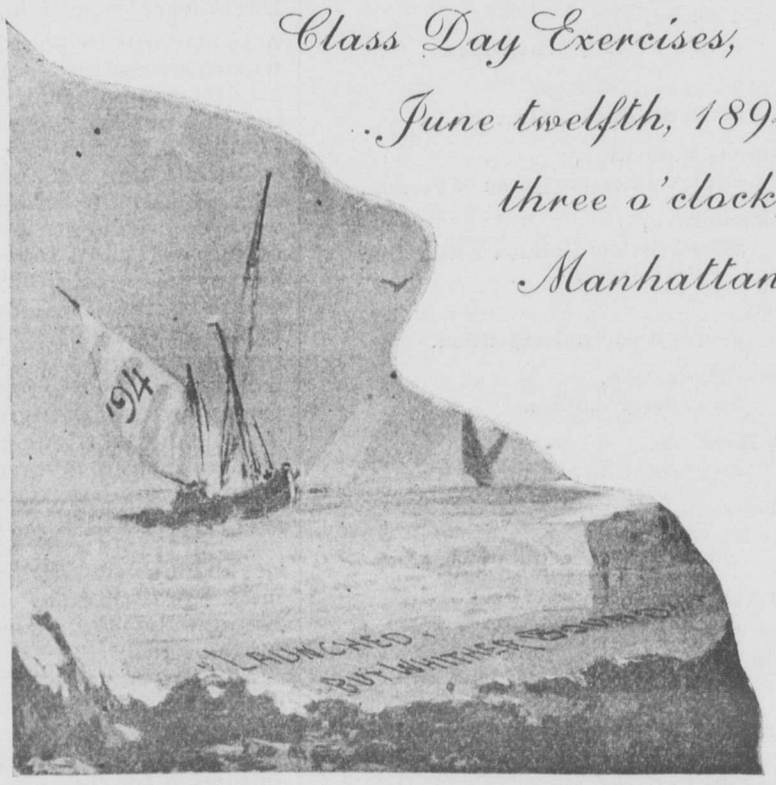


Walter Harling. Martha Cottrell. Isbella Frisbie. S. R. Vincent.
Sarah Cottrell. W. O. Staver. Sadie Moore.
I Jones. Lorena Clemons. Mary Lyman. V. I. Sandt.
H. G. Pope. J. F. Odle. D. L. Timbers. C. C. Smith.
H. W. Moore. Clara Castle. Winnie Romick. C. R. Hutchings.



Main Building.
Mechanics' Hall.
Chemical Laboratory.
Armory.
Science Hall.
Horticultural Hall.

The Senior Class
of the
Kansas State Agricultural College
invites you to attend the
Class Day Exercises,
June twelfth, 1894,
three o'clock,
Manhattan.



Title page, showing Class motto.

FOUR PAGES FROM THE CLASS DAY PROGRAM.

COMMENCEMENT EXERCISES.

The thirtieth annual commencement of the Kansas State Agricultural College differed but little from those of the years gone before. It was better, as each succeeding commencement must be better; otherwise progress is impossible. The time was the ideal "rare day in June" about which poets rave. The attendance was perhaps slightly above the average for an "off year," as the commencements between the triennial reunions are called by the alumni. The theses of the Class showed advanced thought in sufficient degree to be a revelation to many of the visitors who thought they had kept abreast of the times, educationally, in the west in general, and in Kansas in particular.

The Graduates, and Their Theses.

The graduating theses average perhaps 4000 words. These are bound and deposited in the library. Each of the thirty-eight members of the Class was required to make an abstract of about five hundred words—which, in most cases, owing to the scientific character of the thesis, formed the merest outline of the topic—for presentation before the public. The abstracts, including musical numbers on the program, occupied the time from ten o'clock to half-past twelve, and from two to half-past three. The names of the graduates, their post-office addresses, and the titles of their theses are appended. The portraits of the class appear on the first page of this paper:—

FRANK WEBER AMES, Riley,
Geological Conditions Affecting the Purity of Water.

CLARA FRANCELIA CASTLE, Manhattan,
Perfect Liberty.

GEORGE LUTHER CHRISTENSEN, Mariadahl,
Determination of the Horizontal Component of the Earth's Magnetic Field.

JOHN CORNELIUS CHRISTENSEN, Mariadahl,
The Education of the Future.

LORENA ESTELLA CLEMONS, Alida,
Musical Notation.

MARTHA AMELIA COTTRELL, Wabaunsee,
Growth of the American Kitchen.

SARAH ESTHER COTTRELL, Wabaunsee,
Some Abuses of Food.

ALVERTA MAY CRESS, Manhattan,
The Development of English Lyrical Poetry.

FANNIE JANE CRESS, Steubenville, Ohio,
Ventilation of the Home.

ERNEST A. DONAVEN, Agra,
Husbanding Nitrogen in the Soil.

JEPHTHAH WILSON EVANS, Manhattan,
The Chinch-Bug.

ISABELLA RUSSELL FRISBIE, North Topeka,
Humor in English Literature.

EUGENE LEONARD FROWE, Louisville,
The Relation of Commerce to Civilization.

WALTER HARLING, Manhattan,
Our Native Fruits and Their Improvement.

LORENA MARGUERITE HELDER, Manhattan,
The Position of Music in Culture.

CHARLES R. HUTCHINGS, Pomona,
A Low-Velocity Water-Meter.

ISAAC JONES, Ada,
Make the Farm Attractive.

STELLA VICTORIA KIMBALL, Manhattan,
George Eliot, the Queen of Fiction.

MARY ELIZA LYMAN, Manhattan,
Should Public Opinion Affect Our Individuality?

SADIE MOORE, Gardiner,
Coöperation vs. Competition.

WILLIAM HENRY MOORE, Manhattan,
Strawberry Culture.

JAMES FRANCIS ODLE, Ross[illegible]ile,
Progress of Agriculture in Kansas.

CHARLES RANDOLPH PEARSON, Collyer,
The Value of a Knowledge of Veterinary Science to the Farmer.

HORACE GREELEY POPE, Manhattan,
Modern Journalism.

MINNIE LOUISA ROMICK, Manhattan,
The Use of Electricity in the Home.

WINNIE LUELLA ROMICK, Manhattan,
Literature in the Home.

VICTOR IRVIN SANDT, Alden,
The Influence of Micro-Organisms on Civilization.

JOHN ALFRED SCHEEL, Emporia,
Fuels of the Past, Present, and Future.

JACOB ULRICH SECREST, Randolph,
The Value of Bacteria in Our Dairy Products.

CHARLES CHRISFIELD SMITH, Manhattan,
Another World and Ours.

JENNIE RUTH SMITH, Manhattan,
The Oregon and Santa Fe Trails.

WESLEY O. STAVER, Glenn,
The Man and the State.

JOHN STINGLEY, Manhattan,
Immigration—As a Peril.

JOHN EDWIN TAYLOR, Berryton,
Electrical Transmission of Energy.

DELBERT L. TIMBERS, Beloit,
The Relation of the Agricultural College to the Farmer.

PHŒBE CARY TURNER, Rock Creek,
Child-labor: Its Effects on Wages and Welfare.

SAMUEL ROBERT VINCENT, Argonia,
An Infectious Disease.

LUCY HELENA WATERS, Junction City,
Growth of International Arbitration.

The degree of Master of Science, for proficiency in studies noted, was conferred upon the following persons, four of whom, Miss Cottrell and Messrs. Burtis, Davis, and Emch were present:—

JUDD NOBLE BRIDGMAN, '91, Palo Alto, Cal.,
Mechanical Engineering, Physics.

FRANCIS CHARLES BURTIS, '91, Manhattan,
Agriculture, Botany.

MARY EMMELINE COTTRELL, '91, Wabaunsee,
Horticulture, Chemistry, Domestic Economy.

KARY CADMUS DAVIS, '91, Austin, Minn.,
Botany, Horticulture.

ARNOLD EMCH, Gossliwil, Switzerland,
Physics, Architectural Drawing.

FRANK ALBERT WAUGH, '91, Stillwater, O. T.,
Horticulture, Botany.

The Baccalaureate Sermon.

The Baccalaureate Sermon was delivered Sunday afternoon by President Fairchild, who spoke from the text, "Neither shall they say Lo here! or Lo there! for the kingdom of God is within you," the words of Christ found in Luke XVII : 21. It was an earnest, forceful appeal well suited to the times, and was listened to with rapt attention by both Class and audience. The full text of the sermon will be published next week.

Address Before the Literary Societies.

Dr. W. A. Kellerman, for several years Professor of Botany at this College, and now Botanist to the Experiment Station of the Ohio State University, delivered an address Monday evening before the literary societies, giving his lecture the title, "The True Specialist." The apparently sudden changes in nature are no less wonderful when we learn that they occur only after a slow metamorphosis. In a similar manner the nation and the race has developed. Changes which seem to appear all at once are actually the unobserved changes, which on looking back we now see.

In education this is first noted by the founding of Charlemagne's school, at Paris. Among the barbarian tribes were a few clerks who stood high above the level of the many in a love for study and letters. It was due to their efforts that the schools of Oxford and Paris were established. This was the beginning, the first attempt to popularize learning, and the result was to widen men's mind as the contagion spread in all directions. Scores of schools were founded during this period, the precursors of our present system of schools and colleges.

Once it was possible for the student to have a mastery of all branches. Some powerful mind might even comprehend all human knowledge. Now we recognize that a four year's course is only a genaral survey preparatory to selecting some particular field which in itself is enough to occupy attention for a lifetime. The unity of everything in nature makes it necessary for the understanding of his particular work that the student study all allied branches so that instead of being narrowed, the mind is broadened. The specialist alone can advance us in any line; one who strives to cover more ground, fails. Let us consider the quality of work demanded. Mind and body must be trained to a point where the best can be made of it and where it will be strong enough to stand the arduous tasks that will be imposed. His qualities must equal those of the noblest species of humanity. He must be whole-souled or else he will make an ignominious failure.

Months or years of study will not justify the title of specialist. Success demands ceaseless, earnest, protracted, and persistent work. It also demands that he leave the beaten path. To accept new views implies a fearlessness in thought and action too uncommon even among the schools. The impediment is prejudice, the prevalence of which is to be deplored. Then there is the danger of not wholly dropping old ideas, but mingling them with the new, as where the anthropologist ascribes to primitive man the moral qualities of today or the naturalist believes species to have been created, not evolved, or the geologist explains all changes by great convusions. Investigate the conclusions of former workers, study the first principles given as premises, and thus prevent the perpetuation of mistaken view. Absolutely free from prejudice is the true specialist, holding on to the old, yet ever ready to accept the new.

He must be strictly consciencious in experiment. The desire to make him prove what is wished is very strong, but if we cannot trust the experimentor the whole is invalidated. He must be tolerent. There is a tendency to be too positive regarding his own conclusions, forgetting that there are many chances that they may be faulty. If he is sure he knows he has yet to learn that senses and powers are not perfect.

That ridicule and denunciation be not used requires no extended consideration. Injury is sometimes done by censuring an investigator because he does not belong to a certain school, forgetting that though he may thus be incapacitated for the best work, yet, strong, carnist minds can often carve out a way for themselves.

The sublimity of the mountain peak or the cataract appeals to all, but to the cultured mind nothing is insignificant, nothing unworthy of exploration. Unlock one secret and another springs up. To the specialist it is to see the receding bounds of knowledge as he advances and he is humbled and filled with deepest reverence.

If the specialist is possessed of the qualities enumerated we need not fear for the characrer of his work. Nothing should hamper him in the search for truth; the field is illimitable as it is universal. The demands of a practical age should not be allowed to warp the investigator. Far from me to despise these, yet no subjects however abstruse can fail to be of use. Not all are of equal value, yet whatever appertains to man's development has its place. The field should comprise the whole organic and inorganic world. We recognize the forces without as the same as those within us, and we can use all. As nature is changing and unfolding in her progress toward more perfect harmony, so man has planted his steps in paths leading to perfection.

The address will be published in full in a future number of the INDUSTRIALIST.

Class Day Exercises.

At three o'clock Tuesday afternoon in response to invitations sent out by the Class of '94, an unusally large number of guests assembled in chapel to witness the work of the class. After an overture, "Crown Diamonds," by Lorena Clemons and Phœbe Turner, prayer was offered by Pres. Fairchild.

The address was given by Geo. L. Christensen, in which he very ably discussed the subject, "Does the World Need Us?" in which he said: "If we study the history of the present condition of the world we are impressed with the great fact of its progress. A closer study reveals the other fact, how at all times the individual has played a most important part, weal or woe, in determining the course of this progress. The Governmental corruptions, the great social questions, etc., demand men of a higher standard of manhood. It is also illustrated by the unhappy relations between labor and capital. In the professional pursuits of life, men of unselfish desires are wanted. The field of science is open for men who are not narrow minded and simply controlled by their own prejudiced views of some certain problem. In every line of human effort there are possibilites for progress. The world demands progress, and it wants capable men and women in order that it may have it. Instead of causing despair, this condition of the world should be met as a call to duty. It should only show the necessity of the thorough preparation for life's duties.

Next followed a quartette, "Vogel's Waltz," by Mary Lyman, Jennie R. Smith, E. L. Frowe, and Walter Harling.

The class history was presented by Isabella R. Frisbie. Among the many points of interest the following are given: The number of First-years was 343, Second-years 139, Third years 66, and the number graduating 38. Fifteen of the class have finished the work in the alloted four years, ten in less than four years, while twelve have been in College more than four years. The average age of the class is twenty-two years and six months; the average height, five feet six inches; the average weight, 134 pounds. While attending College eleven have been self-supporting, thirteen have supported themselves in part, and fourteen have depended upon others for support. Of the class, twenty-seven are church members. Thirty-five are members of the literary societies of the College, distributed as follows: Alpha Beta, fourteen; Hamilton, seven; Webster, eight; Ionian, six. The political expression of the class is somewhat varied, nine political beliefs being expressed.

W. O. Staver, in his Class prophecy, is to be congratulated on the amusing manner in which he pictured the future life of many members of the class. All will some day be great. Some will become prominent politicians. Some will settle in life as farmers, horticulturists, etc. The President of an Anti-gum Chewing Society is destined to become a prominent gum manufacturer and will employ other members of the class as salesman. The various and somewhat embarrassing positions in which the different members of the class were placed afforded much fun and merriment for those to whom such attention was not paid.

A duet rendered by Mary Lyman and Jennie R. Smith was well received by the audience as was shown by the hearty applause which followed.

The Class poem was delivered by Sadie Moore. The poem was original from beginning to end and reviewed many pleasant and amusing little in-

cidents which have happened since the Class entered College till it finished the work assigned. The new experiences of the First-year, the hard struggles with lessons, the merry times had at College socials and Class,parties were all told in a very skillful manner.

The following verses are taken from the closing part:—

As the chapel is crowded with faces aglow,
When Friday has come with its "Oration Show,"
Will the worried Professor, as he sits in his chair,
His face a sure sign of rhetorical care,
Not sigh as he hears in his audience a snore,
And long for the eloquence of Class '94?

Could we seek a life selfish, or encourage low aim,
With the memory with us of each cherished name
Of the noble Professors who through these four years,
Have incited us ever toward noble careers?

All done! Can it be when the Autumn leaves fall,
And the bell once again shall the students recall,
That these scenes so familiar shall know us no more,
And that never again shall the Class '94
Cheerfully, merrily climb the old hill
Take up their studies again with a will?

The great throbbing world calls upon us today
To take up our life-work—and can we say nay
When we see all around us the work to be done?
The weary worn toilers with race almost run,
Who beckon to us ere they fall out of line
To fill up the ranks and to let our light shine?

John A. Scheel gave the history of the lost spade of '92. Mr. Scheel freely gave vent to his ability as a poet and told the entire story in verse. He related how the Class of '92 had purchased the spade, planted a Class tree, and then presented the spade to the Class of '93 with the request that it be presented to the succeeding Class; how the Class of '93 had failed to keep the pledge, and even concealed the coveted spade from the Class of '94. The poet closed by telling how the out-going Class had overcome all enemies, and then in a few words presented the spade to the Class of '95.

F. J. Smith, a member of the Class of '95, received the spade with words well befitting the occasion. He seemed very careful not to make any pledge which was in any way iron-clad, but finally assured the Class of '94 that whatever the future might be, the spade should be laid up "where neither moth nor rust doth corrupt, and where thieves do not break through and steal."

The Class quartet next rendered a song entitled "Night."

Jennie R. Smith delivered the valedictory, "Launched, but Whither Bound?" in her usual earnest and graceful way in which she said: "Life is a mystic river. At first but a tiny, powerless, gladsome rill prattling between its narrow banks, singing no song save that of innocence and joy. But the banks widen; the stream grows deeper; it seeks mysterious channels; treachery lurks in its broadened current; yet when its waters are fettered who can estimate their power for good. Ah! the sun is sinking; the shadows lengthen, the end is drawing near. The river glides so peacefully to its destiny and resigns its wealth of waters to the all engulfing sea of eternity. It is still the morning of life. There are no forboding clouds to dim the brightness of the rising sun, —type of hope, which sheds its radiance into every heart. But the restless river is never still. It carries us swiftly past scenes of such matchless beauty that we long for it to stop but a moment, for we know we shall never return, yet it glides relentlessly on. It is high noon now, and an ominous silence is brooding over the waters. Faintly borne upon the breeze comes a low, uncertain, trembling wail as if evil spirits were troubling the river's bosom. A storm is raging on the deep. The sound of its threatening voice grows nearer and nearer. The heavens are shrouded in blackness; prayers rise from the white, lips. Can He hear above the roar of the storm? Yes, he hears, and in answer come the sweet, stern words' 'Peace be still,' and the tempest 'holds its breath; the storm king sounds 'Retreat,' and his minions scurry away across the sky, leaving the ship with broken mast, and tattered sails, and perhaps a white face appears above the wave, a white hand clutching a ship-wrecked spar and an agonized voice cries, "Save." The storms of life thus engulf many a soul. Who of himself can boast'I know whither I'm bound. I know at what ports I shall touch; my course is mapped out thus.' Twilight is drawing on, dreamy and quiet. The drowsy and lapping river croons a low, sweet song to those still on the boat, a song full of fading memories, full of shuddering expectancy."

The last number on the program proved something of a novelty when the whole Class proceeded to the stage and sang the Class song. The words were written by Sadie Moore and the music by Lorena Helder, both members of the Class.

The Annual Address.

A large audience greeted Mr. Hamlin Garland, author and traveller, to hear his discussion of "Present Day Reforms." Hamlin Garland was born in the La Crosse valley, Wisconsin, and his early years were spent in the primitive farm life of western Wisconsin and eastern Iowa. In this region many of the incidents relating to his stories of boyhood life were lived. Mr. Garland grew up on familiar terms with the saddle and the herder's routine of hardships and hard work, but found time to study people and books. He finally secured means of entering the seminary near his home, where he was graduated in 1881. Two years later he moved on a Dakota claim, but the land boom which drew him there collapsed, leaving him, however, abundant material for verse and fiction. Since 1884 Mr. Garland has devoted his attention to writing and lecturing, his home being in Boston. He is the author of Boy Life Series, Jason Edwards, The Spoils of Office, and other stories, but his best known work is a recent published collection of tales called Main Travelled Roads.

Following is an abstract of Mr. Garland's address:—

This is an age of reform—the third great cycle of reform. The first was when the hardy and patriotic colonists of America declared that the oppressive and unjust rule of England should cease; the second, when the illustrious names of Lovejoy, Harriet Beecher Stowe, and others awakened conscience against that crying evil slavery and caused it to be blotted from the face of the earth. We are now in the center of another awakening. The excitement and issues of the civil war are dead, and the country oversees harmonious relations re-established. The questions of today are pressing upon us, and we cannot avoid them. The time of their settlement is at hand. Outward troubles with other nations call not our attention. We have no need of the fleets, of ironclads, and of the armies to guard our borders, but it is another kind of army that is tramping the country over, today, in search of work, that calls for adjustment of deranged internal questions. The mechanics from the east cannot find work in the bounteous western State, nor the skilled laborer from the west, in the east. There are three, yes, five men for every job. What is the reason for such a state of affairs? Are the glories of the west closing down? Why so many tramping men? Time was when every man had something to do; today he searches long and hard for work. Formerly the employer had to almost beg the independent employee to work; today, the reverse is the rule.

This nation has squandered its heritage, as never before seen in history, by giving away its land to railroads, etc., with a recklessness that has caused monopolies to rise and grasp the throat of the country with an iron grip, which must be loosed, or we perish. The protectionist cries that free trade is the cause of these hard times and the democrat, that protection is responsible for them. Thus all parties have their pet ideas as to the causesof the trouble. The issues must be met squarely and settled honestly. We never had a will of a marjority in this country. Our system of representation is wrong, and must be changed. "Equal rights and special privileges to none," must be the words emblazoned on the flag of the true party that announces the rising light of this nation. Corporations, copyrights, patent rights—all must be done away with to make true justice to all in America. Let every woman vote if she so chooses, and if she be able to read and interpret the Constitution of the United States. We must strike down these things that make men unequal. God makes provision for equality of all, and if distress has arisen, it is because man has blundered across the laws of nature.

News of the marching of industrial armies fill the columns of newspapers. The cry "keep out the Chinese and the Poles" has been caused by the uprising of those people against the oppressive rule of the capitalist class. Who can blame the workingman? Another class—the land speculator—must be done away with.

Man has meant well, but he has blundered. Though in the midst of oppressive hopes and aims, the future is golden, splendid, bright. The young man of today must strike down special legislation for the few. God will make things better, and all will be free in the truest sense.

The Alumni Meeting.

At five o'clock Wednesday afternoon the Alumni met in annual session in the chapel.

On motion, it was decided to fix the annual dues at twenty-five cents.

To facilitate the transaction of business, and that they may be accessible to those most interested, it was voted to keep all books and papers of the Association within the College walls.

The following officers were elected for the ensuing year: W. E. Whaley, President; F. C. Sears, Vice-President; Mayme Houghton, Secretary; Laura Day, Treasurer.

K. C. Davis introduced the following resolution, which was unanimously adopted:—

Realizing the necessity of having men who are well acquainted with the needs and objects of the Institution in order best to further and perpetuate its efficiency and economic service to the people of Kansas, the Alumni of the Kansas State Agricultural College in regular annual session resolve as follows:—

First, that we, as a body and as individuals, will endeavor by every honorable means to secure the appointment of a fair representation of the Alumni of this College as members of its Board of Regents.

Second, that we will do all in our power to prevent the converting of any educational position of trust into a place of political reward; but that we will fight with unrelenting zeal for the men who are best adapted to college work regardless of party faith or affiliation.

Third, that a copy of these resolutions be printed in the INDUSTRIALIST or any other paper of general circulation, and that a marked copy be sent to each of the various party candidates on State tickets.

The following members were present at the session or on the grounds during the day:—

1867.

Belle Haines-Pond, A. M., Topeka, Kas. Housewife.

Emma Haines-Bowen, A. M., Manhattan, Kas. Housewife.

1878.

Sam Kimble, A. B., Manhattan, Kas. County attorney.

1875.

R. E. Lofinck, B. Sc., Manhattan, Kas. Merchant.

1876.

Nellie Sawyer-Kedzie, M. Sc., Manhattan, Kas. Professor, Kansas State Agricultural College.

1877.

Ella Child, B. Sc., Manhattan, Kas. Teacher.

G. A. Failyer, M. Sc., Manhattan, Kas. Professor, Kansas State Agricultural College.

Wm. Ulrich, M. Sc., Manhattan, Kas. Contractor and builder.

1881.

Dalinda Mason-Cotey, B. Sc., Manhattan, Kas. Housewife.

1882.

Mattie E. Mails-Coons, B. Sc., Manhattan, Kas. Housewife.

1883.

Mary C. Bower. B. Sc., Manhattan, Kas. Clerk.

Emma Glossop, B. Sc., Manhattan, Kas. Teacher.

W. J. Griffing, B. Sc., Manhattan, Kas. Farmer and fruit-grower.

Phœbe Haines, B. Sc., Manhattan, Kas. Post-graduate student, Kansas State Agricultural College.

Jacob Lund, M. Sc., Manhattan, Kas. Mechanical engineer.

J. T. Willard, M. Sc., Manhattan, Kas. Professor, Kansas State Agricultural College.

1884.

F. W. Dunn, B. Sc. Garden City, Kas. Assistant in irrigation, Experiment Station, Kansas State Agricultural College.

1886.

Ada Little, B. Sc., Logan, Utah. Instructor, Utah Agricultural College.

W. E. Whaley, B. Sc., Salina, Kas. Principal high school.

1887.

C. M. Breese, M. Sc., Manhattan, Kas. Assistant, State Agricultural College.

Fredrick B. Elliott, B. Sc., Manhattan, Kas. Real-estate and insurance agent.

F. G. Kimble, B. Sc. Hastings, Neb. Railway postal clerk.

F. A. Marlatt, B. Sc. Assistant in Experiment Station, State Agricultural College.

J. E. Payne, B. Sc., Manhattan, Kas. Post-graduate student State Agricultural College.

W. M. Wright, B. Sc , Lake Arthur, La. Farmer.

1888.

Bertha Bacheller, M. Sc., Lyons, Kas. Teacher.

H. W. Jones, B. Sc., Alma, Kas. Principal of schools.

W. C. Moore, B. Sc., Junction City, Kas. Editor and publisher

Lora Waters, M. Sc., Manhattan, Kas. Teacher.

1889.

J. H. Criswell, B. Sc., Manhattan, Kas. Farmer.

A. B. Kimball, B. Sc., Scandia, Kas. Teacher.

Mary Lee, B. Sc. Manhattan, Kas. At home.

H. S. Willard, B. Sc., M. D., Manhattan, Kas. Physician.

1890.

Grant W. Dewey, B. Sc., Manhattan, Kas. Photographer.

S. C. Harner, B. Sc., Leonardville, Kas. Teacher and farmer.

Bertha S. Kimball, B. Sc., Manhattan, Kas. Post-graduate student, State Agricultural College.

Harriet E. Knipe, B. Sc., Manhattan, Kas. Teacher.

Nellie P. Little, B. Sc., Manhattan, Kas. Teacher.

S. C. Mason, M. Sc., Manhattan, Kas. Assistant Professor, State Agricultural College.

Julia R. Pearce, B. Sc., Manhattan, Kas. Assistant Librarian, State Agricultural College.

H. N. Whitford, B. Sc., Topeka, Kans. Student, Washburn College.

1891.

W. S. Arbuthnot, B. Sc., D. V. S., Belleville, Kas. Veterinarian.

H. W. Avery, B. Sc., Wakefield, Kas. Farmer.

R. J. Brock, B. Sc., Manhattan, Kas. Lawyer.

F. C. Burtis, B. Sc. Manhattan, Kas. Assistant, State Agricultural College.

C. A. Campbell, B. Sc., Auburn, N. Y. Student and instructor, Auburn Seminary.

Christine Corlett, B. Sc., Manhattan, Kas. Teacher.

Mary Cottrell, B. Sc. Manhattan, Kas. Post-graduate student, State Agricultural College.

K. C. Davis, B. Sc., Austin, Minn. Principal of Schools.

Pearl Dow, B. Sc., Manhattan, Kas. At home.

Anna Fairchild-White, B. Sc., Manhattan, Kas. Housewife.

Amy M. Harrington, B. Sc., Junction City, Kas. Teacher.

Delpha Hoop, B. Se. Manhattan, Kas. Teacher.

Mayme Houghton, B. Sc., Manhattan, Kas. Teacher.

G. V. Johnson, B. Sc., Sedan. Kas. Printer.

Bessie Little, B. Sc., Manhattan, Kas. Assistant and post-graduate student, State Agricultural College.

Nellie E. McDonald, B. Sc. Manhattan, Kas. Clerk.

Hattie N. Noyes. B. Sc., Wabaunsee, Kas. Teacher.

H. V. Rudy, B. Sc., Fresno, Cal. Fruit grower.

Ben Skinner, B. Sc., Fairview, Kas. Principal of cchools.

Caroline Stingley-Van Blarcom, B. Sc., Kansas City, Kas. Housewife.

Lillian St. John, B. Sc., Manhattan, Kas. Teacher.

S. L. Van Blarcom, B. Sc., Kansas City, Kas. Railway postal clerk.

Fannie Waugh, B. Sc., Manhattan, Kas. Post-graduate student, State Agricultural College.

Bertha Winchip, B. Sc , Manhattan, Kas. At home.

1892.

Grace Clark, B. Sc. Manhattan, Kas. Clerk, State Agricultural College.

G. L. Clothier, B. Sc., Alma, Kas. County Superintendent.

Elizabeth Edwards, B. Sc., Manhattan, Kas. Teacher.

J. N. Harner, B. Sc., Green, Kas. Farmer and teacher.

L. S. Harner, B. Sc., Lasita, Kas. Farmer.

J. W. A. Hartley, B. Sc., Manhattan, Kas. Teacher and horticulturist.

J. L. McDowell, B. Sc., Manhattan, Kas. Medical student.

Kate Oldham-Sisson, B. Sc., Toronto, Can. Housewife.

D. H. Otis, B. Sc. Manhattan, Kas. Assistant State Agricultural College.

A. D. Rice, B. Sc., Keats, Kas. Teacher.

F. C. Sears, B. Sc., Manhattan, Kas. Foreman, State Agricultural College.

May Secrest, B. Sc., Randolph, Kas. Teacher.

Ruth Stokes, B. Sc., Manhattan, Kas. Post-graduate student, State Agricultural College.

G. W. Wilden, B. Sc., Topeka, Kas. Draughtsman, railroad shops.

1893.

Laura Day, B. Sc. Manhattan, Kas. At home.

Maud Gardiner, B. Sc., Bradford, Kas. At home.

Ivy Harner, B. Sc., Lasita, Kas. Teacher.

Margaretha Horn, B. Sc., Manhattan. Clerk, executive office, State Agricultural College.

Fred Hulse, B. Sc. Manhattan, Kas. Farmer, State Agricultural College.

C. A. Kimball, B. Sc., Manhattan, Kas. Law student.

T. E. Lyon, B. Sc., Garrison, Kas. Principal of schools.

W. O. Lyon, B. Sc., Clay Centre, Kas. Teacher.

Edith McDowell, B. Sc., Manhattan, Kas. At home.

Nora Newell, B. Sc., Manhattan, Kas. At home.

Susie Noyes, B. Sc., Wabaunsee, Kas. At home.

H. L. Pellett, B. Sc., Prairie Centre, Kas. Farmer.

C. J. Peterson, B. Sc., May Day, Kas. Teacher.

J. D. Riddell, B. Sc., Conway, Kas. Farmer.

Agnes Romick, B. Sc., Manhattan, Kas. Teacher.

F. R. Smith, B. Sc., Manhattan, Kas. Law student.

G. W. Smith, B. Sc., Manhattan, Kas. Teacher.

W. E. Smith, B. Sc., Manhattan, Kas. Teacher and horticulturist.

C. H. Thompson, B. Sc., St. Louis, Mo. Instructor in Shaw School of Botany.

G. K. Thompson, B. Sc., Irving, Kas. Civil engineer.

Drill.

The military drill given by the College Cadets under the direction of Captain H. G. Cavenaugh attracted the usual attention. The company, headed by the Cadet Band, marched to the campus east of Main Hall, where different company movements were executed. The company was then divided, one squad going to a point south of the new Library building for the purpose of acting as a supposed enemy, while the remainder of the company marched to the field in the southeast part of the College grounds, formed a skirmish line, and proceeded with the attack. The firing of blank cartridges, together with the different movements and the charge, well represented a part of the science of war as practiced in actual service.

Commencement Notes.

The industrial departments made their usual good displays of student work.

Editor Cowgill, of the *Kansas Farmer*, made his annual Commencement visit to the College to report the exercises for his paper.

Regents Kelley, Stratford and Goodyear were accompanied by their wives, who found much of interest in the exercises of Commencement week.

Rev. S. J. Norton was early on the grounds with note book and pencil in the interest of the Manhattan *Republic*, for which he prepared a good report of the exercises.

The new building was an object of great interest to the visitors, and it was thronged all day long. The size and evident stability of the structure excited the surprise and admiration of all.

Verta Cress and Rena Helder, '94, are fortunate girls—the first finding a new piano upon reaching home Wednesday evening; the second becoming the owner of a beautiful gold watch.

Capt. Cavenaugh can safely promise a military drill next Commencement that will be worth looking at. There will probably be two hundred and fifty Cadets in the ranks at that time, and there will be fewer big gaps on the campus than were shown Wednesday between the small squads.

The dinner furnished by the Congregational ladies was all that the desires of the inner man could ask for. Nearly four hundred dinners were served, to say nothing of ice-cream and lemonade. Still the remuneration did not compensate for the slavish toil of preparing and serving a public dinner.

The Manhattan *Mercury* was represented by Mr. A. K. Fritts, who furnished his paper with an interesting account of Commencement and College work and growth of the past year. The *Mercury* publishes also a three-column cut of the new building, Science Hall, which was made especially for the paper.

Hon. F. D. Coburn, Secretary of the State Board of Agriculture, attended Commencement exercises, and occupied a chair on the rostrum. His interest in the College grows with the years. If the institution had one such friend in every county in the State the College walls would not hold the host of young Kansans that would gather here for an education.

The excellence of the music for the exercises of Commencement week was the subject of much comment. It was furnished by the Department of Music under direction of Prof. Brown. The "High School Cadet March" by the Mandolin Club on Wednesday was a pretty thing, well rendered; and the original piano solo by Miss Rena Helder, entitled "Ninety-four Waltz," dedicated, as is not generally known, to Miss Kate Pierce, '95, was highly appreciated. Few outside of the Class knew, too, that it was Miss Helder's graduating production, or "thesis," on which she next week receives a diploma from the Kansas Conservatory of Music at Leavenworth.

"Does the World Need Us?" is the title of an address at the Kansas State Agricultural College, and the graduating class expects the world to answer. It is pretty safe to assume that the world will answer, Yes. The world needs everybody who can work and will help it along. There is lots to do in the world, and a worker is always welcome; and if a man's arms don't happen to be strong, he is just as welcome if he is cheerful. If he can sing a song, dance a jig, or tell a story, and make the work of the workers seem lighter, the man upon the threshold of the world is just as welcome as though he could throw a steer over his head. It is willingness that makes one's welcome sure. If the young men and women from the Agricultural College are willing, they can easily find a place, and make the old world need them.—*Kansas City Star.*

The program of Class Day was original in design, being a booklet of six sheets of heavy enameled paper, with an extension parchment cover, tied with silk cord. On four of the pages beautiful photo engravings showed a group of College buildings, the invitation and class motto, and the portraits of the Class in the order named. On the fifth sheet was the program, and on the sixth the Class roll. The program was the product of the Printing Department; but much credit for the excellence of the work is due to Mr. J. C. Christensen, a member of the Class, who did the presswork, and was untiring in his efforts to produce an artistic piece of work. Four of the pages are reproduced on the first page, but on a country cylinder press with its small ink-distributing surface, it is impossible to print the engravings in a manner to do them justice.

GENERAL LOCAL NOTES.

Prof. Jones left Friday noon for Jacksonville, Ill. He intends to visit a brother-in-law in North Dakota during the summer.

George V. Johnson, '91, and Lottie Finley, student in 1889-90, were married in Manhattan, on Tuesday, June 12th, and left the same day for their future home in Sedan, Kansas.

Mrs. Kedzie lectured before the Riley County Teacher's Institute, Thursday evening, on "A Visit to the Yosemite Valley." The lecture was copiously illustrated by stereoptican views.

E. F. Nichols, '88, for two years past Professor of Physics at Colgate University, Fort Hamilton, N. Y., is to be married today (June 16). He will go at once to Europe, having been granted a two-years' leave of absence for further study.

S. R. Vincent, a member of the Class of '94, was married Thursday evening, June 14th, to Miss Cora Salkeld, of Manhattan. The happy couple left yesterday for the home of the groom's parents near Argonia, Kansas, where they will be at home for two weeks.

Arnold Emch, for the past year a special student and assistant to Prof. Walters, has been elected Assistant in Mathematics in the Engineering Department of the State University. Mr. Emch has just completed a post-graduate course here in physics and architectual drawing. His ability as a mathematician will win for him fame one day despite the modesty under which the young Swiss hides his light.

Mrs. Kedzie was driving down the hill Thursday morning, with Mrs. Stratford's baby in her arms, when a wheel, in some mysterious way, came off the buggy, and "Old Nick," the usually staid and reliable horse, took fright, making an abrupt turn among the trees to the right of the drive and throwing the occupants of the phaeton out and under the wheels, fortunately freeing itself from the buggy at the same time. Passers-by removed Mrs. Kedzie and the baby from their uncomfortable position. Both escaped—the baby without a scratch, and Mrs. Kedzie with slight bruises.

Grounds and Buildings.

The College grounds and buildings, occupying an elevation at the western limits of the city of Manhattan, and facing towards the city, are beautiful in location. The grounds include an irregular plat in the midst of a fine farm, with orchard, vineyard, and sample gardens attached, the whole being surrounded by a durable stone walls. The grounds are tastefully laid out and extensively planted, according to the design of a professional landscape gardener, while well-graveled drives and good walks lead to the various buildings. All of these are of the famed Manhattan limestone, of simple but neat styles of architecture, and admirably suited to their use. All recitation rooms are excellently lighted and ventilated, and are all heated by steam or hot water. A complete system of sewerage has been provided.

College, 152x250 feet in extreme dimensions, arranged in three distinct structures, with connecting corridors. This building contains, in its two stories and basement, offices, reception room, cloak rooms, studies, chapel, library, reading room, kitchen laboratory and dairy, sewing room, society rooms, printing office, and twelve class rooms.

Chemical Laboratory, one story, 26x90 and 46x75 feet of floor space, in form of a cross. It contains eight rooms, occupied by the Department of Chemistry and Mineralogy.

Mechanics' Hall, 39x103 feet, two stories, and 40x80 feet, one story, occupied by wood and iron shops music rooms, iron foundry, lumber rooms, etc., in addition.

Horticultural Hall, 32x80 feet, one story and cellar, having cabinet room, class room, and storage, with greenhouse attached.

Horticultural and Entomological Laboratory, with propagating houses attached.

Museum Building, 46x96 feet, and two stories high. This building, which has served many purposes, is now fitted for an armory, drill room, and veterinary laboratory below, and for class room and laboratory for Department of Botany and Museum of Natural History above.

Science Hall, containing the library, with ample reading rooms; class rooms and laboratories, and cabinet room for zoology, entomology, and botany; and suitable rooms for the various College societies.

Appropriation is also made for a central steam plant, to furnish heat and power for all the buildings. This plant is to cost $14,000, and will be completed in the fall of 1893.

The farm barn is a double but connected stone structure, 50x75 feet and 48x96 feet, with an addition of sheds and experimental pens 40x50 feet. A basement, having stables for 75 head of cattle, silos, engine room, and granaries, underlies the entire structure.

The horticultural barn is a stone building, containing storeroom, granary, and stables for several horses.

The foundries, lumber house, implement house, piggery, and various out-buildings are of wood.

Two stone dwellings, occupied by the President and the Professor of Agriculture.

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

Library.

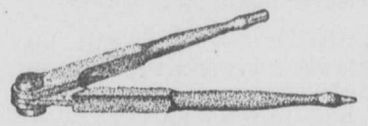
The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

WM. KNOSTMAN, the Clothier, offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry and Gold Spectacles, also Musical Instruments.

E. K. SHAW, Jeweler and Optician. Watches, Jewelry, Silverware, Spectacles, Clocks, Fountain Pens, Gold Pens, etc. Repairing of watches, Clocks, Spectacles, and Jewelry done promptly and skillfully. A written guarantee given with all warranted watch work. 308 Poyntz Ave

DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

DENTIST.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

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THE INDUSTRIALIST.

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All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary

BACCALAUREATE SERMON.

BY PRES. GEO. T. FAIRCHILD, DELIVERED JUNE 10, 1894.

THESE eventful days, crowning the years of a course of study, have in them such individual interest for the graduates as to suggest the appropriateness of a sermon addressed especially to them. The friends are gathered in sympathy, with their earnest outlook upon a world awaiting their energy. Their foster mother sends them forth with pride, and yet with anxiety for their usefulness. They themselves long for a clue to the hidden fortune before them. Advice and council, not always welcome to the receiver nor pleasant to the giver, at such times are sought with earnestness and granted with sympathy.

In yielding, then, to this time-honored custom, I have sought, my friends of the Class of '94, to bring my thoughts nearer to your thoughts in these days of earnestness. The world invites you now to solve its problems, to fight its battles, to conquer its evils. It calls to you, as it did to the knights of old, to right its wrongs. In the clamor of many voices you may hesitate, anxious to champion the cause which ought to win, yet doubting the meaning of the various voices. You feel that you have come to your majority in troublous times. The battle of the ages between good and evil seems to you thicker just now than it ever has been in the past. You conclude that it may be your lot to settle vexed questions of human equity and true polity for all time. Believing also that this may be true, I bring you a message from other troublous times, from an age of ignorance, oppression, cruelty, tyranny, and degradation and want incomparably worse than ours. I take my text from the lips of a teacher beginning a grand reform in that world of miserable doubt, rage, and hate. These are words of Jesus, found in Luke XVII, 21: "Neither shall they say Lo here! or Lo there! for the kingdom of God is within you."

It is the fashion of our times to claim for every proposed remedy for ills, social or political, the sanction of Christianity. An appeal to Christ for direction as to modern necessities in philanthropy or government is popular because easy. Since Christ represents to men in all recent ages the incarnation of good will to men, it is easy to claim that since my method of settling vexed questions implies good will to men, it is Christ's method, and would have his sanction were he now walking our streets as he did the highways of Judea some 1900 years ago. The reasoning is wholly fallacious, of course, since good will may be equally an element in two contradictory devices for exercising that good will. Wisdom is not insured by the presence of a desire to do good, as the whole history of human follies proves.

At the same time it is true that Jesus of Nazareth stood before the world in Judea as the champion of the poor, the oppressed, the afflicted, and even the pitying friend of the wicked. To this day it is Christian earnestness that holds open the door of true relief for want in every form. The immense progress of the world in liberty of life and possession and thought has been with constant appeal to the spirit with which Christ taught. The world today recognizes his authority in the kingdom of righteousness between man and man, even when it ignores his divine commission and authority as judge in the universe of God.

Yet, Jesus plead for human rights and welfare by proclaiming everywhere the kingdom of God. The kingdom of heaven among men is the consummation of his work on earth. The promotion of that kingdom is the aim of his disciples in word, in work, and in prayer. The reign of universal peace is the kingdom of God, and all progress along the line of true welfare for the race must be in establishing this kingdom. I ask your attention today to the nature of this kingdom in various relations to human wants; to permanence in the universe; to each human will; and to the external forces and methods of human society.

This kingdom of peace is to deal with human nature in all its variety of capacities and abilities, actual and possible. The conditions of its maintenance are found in human wants and powers. The needs of the race in all particulars have to be met, even down to individual welfare. A provision for average wants is no satisfactory provision for any but the exact representative of the average of all men. Order a suit for the average man, and how many of you will be suited? Record the thoughts of the average man, and how many of those thoughts would be yours or mine? Human welfare means the welfare of each human being, and any condition of lasting peace implies a meeting of all needs in the multitudinous development of human wants and capacities. This kingdom cannot, then, be a mere provision for physical wants—air, warmth, food, drink, and shelter; but must reach to every intelligence and feeling that contributes to humanity; or is a part of human welfare.

Still more is required in this kingdom of heavenly peace than present abundance of the things we desire. Each human soul is endowed for growth. Each day it needs more and different good things. As the youth outgrows the swaddling cloths, as the man puts away childish things, every soul is so developed in a reign of true righteousness as to need a new supply of good, with each step in progress. The heaven of all hopes provides for more and more of welfare. The kingdom which we pray for must be so ordered that men may lead a larger and larger life in having greater capacity to enjoy. The chief advantage of the enlightened sage over the savage is in his indefinitely greater bulk of wants to be supplied and greater stimulant to supply them. If having all we want were true happiness, the least gifted of God's creation might be as happy as his noblest. We measure happiness by its relation to growing wants with growing satisfaction.

In this ideal kingdom, too, there must be room for growth of capabilities. Every condition for advancing wisdom, skill, and energy must be supplied. Exertion is the truest measure of progress and of content. A human soul without a true activity of all its powers lacks true happiness. Angelic blessedness is coupled with the thought of ministering agencies for good whose activity is ceaseless. The haven of laziness can never be a heaven of rest for true humanity. The unwearied labors and the unending satisfaction blend in the same blessedness. The life which does not call out our best energies with each day is no true life for you and me. When the true kingdom comes we must find every active stimulant to exertion still growing. Appetite must warn us against want, propensities must stir us to every acquisition, and affection must spur us to usefulness. Our very existence as human beings depends upon these growing powers.

Still higher requirements are to be sought for the cultivation of character. Virtue stands chief among the needs for personal development. Our kingdom to come must cultivate righteousness by all surroundings. Our place in the universe as men and women would be lost, if character for righteousness is not chief among our gifts. The ideal life must always be that in which virtue outshines all other conditions and qualities. Health, wealth, and wisdom all have their culmination in virtue. There is no personal life worth living without this expectation, and this growing realization of true manhood and womanhood. Material wants are as nothing before our need of virtue, an active growing self-control, which fits us for our true place at the head of all nature.

With this array of good things in perquisites and powers, we need an approving conscience, satisfied in doing the work of God's kingdom. The crown of life in the plaudit "Well done" gains its true character from being able ourselves to understand its nature. As we become able to try our conduct aright, we learn the full meaning of praise and blame. We cannot conceive happiness complete unless it includes a clear-cut, manly conscience, at peace with God's creatures.

Our present condition as a race, as a country, or as a community falls short of the kingdom of heaven just so far as it lacks these requisites of true human existence and growth; and any prospective state of society must be tested by its provision for all these wants and tendencies. Any claimant for our interest among the many panaceas for present social ills must meet such a test. Is its relation to human welfare as broad as human nature? we must ask of every prophesy of the kingdom coming; for wants can never be met in piecemeal, unless the range of wants is provided for in successive steps. The one essential of food but provides the way for more essential comforts; and these only fill us with the need of the higher life of mind and soul. God's kingdom is a kingdom of souls, with all the essentials of physical life merely the foundation for its upbuilding.

Such a reign of universal satisfaction may well be called the kingdom of God. It remains for us to enquire if anything less can be in the divine plan for the universe.

Nothing less extensive can be thought of as suited

to continuance. Our conception of an endless existence for the universe requires a tendency toward such a state of society as may continue without deterioration. The imperfections of the present must give way to such a tendency. The progress of our race in all directions is our assurance of its continuance. The loss of higher attributes we call degradation, as a sliding back in the scale of being, because human nature requires these elements for its existence.

Nothing less comprehensive is adapted to all conditions of manhood. The kingdom of God must be suited to all stages of growth in his creatures; it must provide for the real wants of highest and lowest in the range of strength, intelligence, and character. The indefinite variety of talents distributed to its subjects must be used to the utmost, and all the varied longings must be provided for.

The kingdom of God, to be permanent, must be based upon the equity of adaptation to nature. God's equity is not in equality, but in maintaining the ratio of need and satisfaction. Omnipotent power cannot give to a child the satisfaction of a man, nor satisfy a man by meeting the wants of a child. Every condition of individual interest is proper matter of consideration in a universe of souls, and the actual reach of such consideration is a test of our approach to the divine plan of the universe. All progress in this universe is along the line of such adjustment to wants. Men of every condition and of no condition have their niche out of which to grow, and the kingdom of God provides the opportunity to grow. Just so far as the present regime cuts off such opportunity, so far is it short of being the kingdom of God. Such opportunity must still be open in adjustment to constantly changing circumstances of want and power. Each new generation is to be provided for in its new growth of abilities. Any form of society that does not yield to these growing wants by constant adjustment to individual development cannot be part of the true kingdom.

Out of these general principles we may deduce a more distinct ethical principle: that equity requires an adjustment to each faculty in human nature as developed in the individual. In the rough effects of human government, laws are made for a type, and the judge is left to roughly adjust to each variation from the type. In the family, justice requires adjustment, with constant perception of differences in temperament, in temptation, in intelligence, in experience. Still more truly the test of divinity in government is its true equity upon a basis of individual nature. The true kingdom of God will provide for want with equity, rather than with equality. God's ways are equal, not because he gives to all alike, but because he gives all according to need, upon scales adjusted to individual talents, individual growth, individual worth, individual capacity for good. Any provision for human welfare without this fails of being consistent with the plan revealed in creation, and so cannot stand in the kingdom of God.

The kingdom of God must in its nature be universal: its realm is all-pervasive. Any plan for betterment which ignores this universality of God's kingdom can have no claim upon its sanctions. The principles which hold good within a State must be equally good between States. Territory added to territory has the same claim upon equity. Continents cannot stand aloof in the same realm of righteousness. Even independent worlds, if communication were attained, would come under the same law. Then no scheme of government, however desirable for only a class, a clan, or a section, can stand in the universal reign of divine law. Temporary expedients of class against class, of nation against nation, always proclaim a state of partial warfare. All legislation of such a nature is confessed to be a makeshift, bound to yield to the law of universal equity. All organizations for class protection, in so far as they limit good will toward all men, are confessedly opposed to the kingdom of God. In that kingdom we all expect, with Tennyson, a time when

> "All men find their own in all men's good,
> And all men join in noble brotherhood."

With such tests for the true kingdom, it is evident that the genuine origin, operation, and final results of its working are in the human soul. It cannot but be "within you," not simply in the midst of you, but within your individual life, sensibility, and responsibility. A few suggestions may help you to realize this.

The nature of human satisfaction is personal. The want which accords with nature's plans is a personal want, and that want is within. Its origin, developments, and checks are soul centered. Wants cannot be put on or taken off from outside, but grow with our being. Every application of the kingdom of God to welfare touches your soul and mine. What is needed is found at every step by adaptation to the soul's need.

While this is evident from the nature of present satisfaction, it is still more evident in planning for the perpetuity of the soul's interests. The enjoyment of today becomes a part of a continuous self, growing into greater and greater importance as the years go on. It is impossible to fix a limit to a soul's interests. The body, having served its uses, may be buried out of sight, but since the soul's uses are in itself, we cannot put a limit to its utility. It can never become useless. Its interests are as eternal as existence. All the things which contribute to the soul's welfare may be used up; they are temporary. But the self—the soul—has a perpetual interest, paramount to everything else. The kingdom must touch the soul for eternity.

The soul, again, is the only place of freedom. True freedom is self-control. The ideal reign of law is when each makes, enforces, and honors right rule in his own soul. All restraint except self-restraint is constraint—an interference with freedom; however necessary where self-restraint is wanting, such a constraint is a confession of failure to establish the true kingdom. The parent, the teacher, the philanthropist, all acknowledge an incomplete government so long as the individual self remains rebellious. This land of the free appeals to us for patriotic love in so far as it offers men opportunity for genuine freedom of self-control, and only interferes when such self government fails.

But a stronger reason still for finding the kingdom of God within is found in the fact that all moral activity is judged from the standpoint of motive. The good or ill intent decides our praise or blame. Every act of our neighbor affects us according to his purpose as we understand it. We bear with trifling annoyance the accidental trespass; we endure with patience a serious injury, if unintended and deplored; but the least intentional slight rankles as a wrong. Love, and love only, is the fulfilling of the law between neighbors in the kingdom of God. But such good will exists only in the individual soul; it is "within you," if found at all.

Finally, the kingdom of God is within you, because anything less than true heart-yielding to righteousness is less than the kingdom. God is the one ideal of eternal power, infinite wisdom, absolute righteousness. True heart-obedience to this ideal is the reign of God. Anything less is rebellion against the eternal rule of righteousness, and rejects the kingdom of God. When we pray, "Thy kingdom come," we ask not for some external reign of force, but express our yielding homage to that kingdom in our own souls. The prayer is our pledge of faith, allegiance, and sympathy with all souls that obey.

Such being the nature of that kingdom of righteousness which Jesus proclaimed, lived for, and died for, we may rightly inquire, how may such a kingdom be established? In our answer we must not forget the intrinsic personality, perpetuity, and pervasiveness of its character. We must see at once that such a kingdom cannot be established by force, organized or unorganized. Violence generates violence; it conquers greed with greed, and can be only the last resort in opposing brutishness. The armed self-defence by which I conquer a burglar gains no victory over his will. At the best it holds him harmless till other forces conquer his heart and subject him to right rule within. So no bloody revolution anywhere brings the reign of peace. It may save here and there from entire extinction some vestige of opportunity for the growth of true righteousness; but quite as often it establishes still worse tyrants than it overthrows. It is the very last resort of liberty lovers, since it is a full confession of failure in progress toward the reign of peace.

Such a kingdom is not to be found in the machinery of government—constitutions, official duties, methodical directions, checks and counter checks, and elections These are but the result of agreement to prevent useless friction in the outward forms of action. The highest organization of the body politic expresses only a shadow of the true unity which must maintain that organization as a means to the true end of government. No scheme or device of regulation gives more than the mechanism for executing a partial unity of purpose; it cannot take the place of underlying character in the people. The best government the sun ever shone upon might become the worst, with only the degradation of individual conscience, all machinery remaining intact.

We need not expect to gain this new kingdom by law-making. Laws are never more than the expression of average judgment upon most obvious of external relations. The mutual duties of neighbor and neighbor, of teacher and pupil, of parent and child, of husband and wife, or even of employer and employe, cannot be defined by law. Law fixes only an outside limit of action, to save, as it were, a remnant of good after righteousness is lost. One law may be better than another from the fact that it sooner recognizes a trespass upon outward rights; but no formal law can solve the problem, How far I am my brother's keeper? Or answer the question, Who is my neighbor? Law must always lag behind the public conscience, even in things it attempts, and the bulk of good will must be found where no law can be formulated. The mothers whom we reverence for their restraining love which trained our affections toward right action have made a mightier law than legislatures give, and one more adjustable to every time and place, more true to the wants of our nature. Let us respect law as a means of expressing the people's will; but let us not expect from it the conquest we hope for and pray for in the kingdom of God. We know that even the form of law covers, at times, the worst of oppressions. Human slavery, in this country, at least, was the creation of statute law. But for law, slavery would have died long years before its struggle for life on Kansas soil and the subsequent contest which destroyed it. Law is every where the mere outward limit of restraint to evil-doers, and may be their intrenchment against the genuine attacks of conscience and right-teaching. At best it bears the interpretation of every individual judgment.

If, then, we trust in courts and judges, have we found a true exponent of the true kingdom? An upright judge is nearer justice than any law yet framed. The safety of human rights, political and civil, rests in an enlightened and untrammelled judiciary. We can have no faith in government or law or society after faith in our judges is lost. Hence, in all human devices for freedom and social welfare, dignity, independence, clear-sightedness and freedom from temptation are sought for in the judge. Most of criminal laws allow for fluctuation in penalties at the discretion of the judge, with the belief that such a man can better touch the individual need. Most of our civil law gains its directness of application from the decisions of impartial judges in unbiased courts. It is well to expect the judge to interpret duty and enforce it. Yet how far short the best of judges must come of teaching personal duty! Above his authority is the kingdom of righteousness in individual conscience, making even the judge but a pleader in its courts. When men are ready to do the right, the court of arbitration may help to agreement; but then, very often, such service is not needed. Courts can only serve the world up to the level of our truth and devotion to the loftier kingdom of God.

You realize, then, that all righteousness is to be found finally in the self-direction of a human soul devoted to the kingdom of God—the eternal, all-pervasive kingdom of souls. You and I cannot settle cases by any less extensive principle than actual consideration of all human interests, for what they are worth, in the time and place demanding judgment. No maxim of equality in weight, height, length, breadth, intelligence, or virtue insures equity. Every interest of every brother is in our keeping so far as our ability may reach. In the kingdom of God, when we reach it, we shall treat every man, if possible, according to his needs, that is, according to what he is in capacity and power.

The true pattern for the kingdom of God is given in the life of Christ. He has conquered the world, and his conquest remains in the hearts of men. Let us analyze his conquest.

His life was a victory over circumstances. Born in a manger, reared in poverty, misunderstood by friends and enemies, persecuted, betrayed, crucified, he rose so far superior to these untoward circumstances as to make them only add brightness to his kingdom. Beset with temptations, he so far cast them behind him that accidents of place and time and opportunity cut the least possible figure in his history. Apparently routed by his enemies, his name with its inspiring power has supplanted thrones and remodeled nations. Left apparently to die alone, his conquest of souls has reached around the globe till, he leads the hosts of the righteous in all lands and for all time.

Yet in all his plans of conquest he did not right the wrongs of his day in outward form. Personally he endured wrongs, in order to conquer. Under the most oppressive of alien governments, he paid tribute to Cæsar. Before treachery and false testimony, he was dumb. From the tyranny of courts, he appealed in calm unruffled temper to the court above. Amid the tortures of the cross, pity, not rage, condemned both accusers and executioners, and proved the majesty of his reign in the kingdom of God.

Neither did he directly champion the wrongs of others. Although his mission was good news to the

poor, the blind, the lame, the weak, and the sinful, he attacked only hypocrisy, but taught his lesson of righteousness in personal doing of good and in precepts of personal obedience in the everlasting kingdom.

Appealed to for the poor against the rich, he pronounced the poor blessed,—whose riches are eternal,—and pitied the rich,—who hardly shall enter the kingdom.

Asked by a disinherited younger brother to direct in division of an estate, his answer is almost harsh, "Man, who made me a judge or a divider over you?" and he enforced his position by that wonderful lesson of precept and parable from the text, "Beware of covetousness." One might easily assume that such a lesson would come in judgment against the greed of the elder brother who refused to divide. But no! his greed was too evident. All were ready to condemn such a one. The lesson is meant for the poor but eager claimant, whose envious greed marks him as still far from the kingdom of God. To take from one greedy man for the use of another greedy man is on equity; both are unjust.

His lesson here and now to you is the same urgent plea for a truer life than can be found merely in things around you. Be right, do right in each personal act, and the genuine kingdom of God is won. Sin alone is the enemy of God's kingdom, and conquest over personal evil is the true victory.

Conclusion:—My friends of the class of '94, I have brought this lesson for you. You are all, I trust, reformers. The world in every age needs that its strongest men and women be leaders to better life, and so to reform—better living, better society, better government, better means of elevating the race. Educated men and women ought to be ablest in this field of conquest for the best. You owe it to your generation to be leaders in every movenent for true welfare. But the only best, the only better, the only welfare for each one of you begins in self conquest for the kingdom of God. Not a wrong can be righted except in a genuine appeal to conscience obedient to God. Are you dissatisfied with the world's rough settlement of bargains, reform your own law of bargains in equity. Are you angry at dishonesty in high places, conquer dishonesty in your own low place, that honest thought and word and deed may wield their power in you and through you to the utmost reach of influence. No dishonest trick for securing power can possibly prepare for an honest wielding of power.

As you are sure in your own self knowledge that no outside device can make you honest-hearted, you must be equally sure that it can make no one else honest-hearted. Put no faith then in contrivances for righting wrongs which do not depend first and always upon sincere good will to men—all men.

As you know by self knowledge that every step in your welfare is a necessary sequence to previous steps, inseparable from the influence of your past, be sure that the kingdom of God is to come by step after step in the line of true, individual self-control. Your devices and mine are but some of the steps up, or down, that affect men as they are, for good or ill character.

Finally, you have supreme control in one portion of God's kingdom. You alone are responsible, under God, for the victory over wrong in your part of the realm. Are you ruling in that little kingdom as one who shall give an account in the kingdom of God? If not, you are dishonestly posing in the guise of a reformer, seeking first not the kingdom of God but some other good, some place, some name, some power, some pelf, for which God's kingdom has no place. If in each act you are true to the needs of your part of the kingdom, you have done your part toward the conquest for the universal kingdom. As each day opens wider place for influence, your acts have wider scope, until your truth may fill the world. Like the Christ, you lead by your life, and join him in conquest of all the world. You are today his representatives in these streets of ours.

Let, then, this inner life be your test of all promises for reform in the social, the commercial, the political world. Any scheme which appeals to appetite, passion, or affection, must be questioned with suspicion,—must be tested by your sense of responsibility for the good of all men, in the little realm of your authority—conscience. Above all things, be suspicious of all plans for righting other people's wrongs where "distance lends enchantment,"—and confusion, too,—to all your views of need and abilities. Your kingdom of God is not yonder, nor hereafter, but within you. Are you a ruler in this kingdom of God,—ready for promotion? This kingdom includes the lesser good—the all things to be added—and puts one in the place of eternal honor and power. In that place alone you reform the world toward welfare.

But, you ask, must I not join the great movements for reform, in church, society, and state? Will this test end the questioning of our time? I answer that this test sets you right for any judgment in your sphere of acting. "If any man will do my will, he shall know of the doctrine, whether it be of God." If you, in the true spirit of the kingdom of God, seek duty near at hand, you will find the nearest way to every true reform. It is not our duty to decide for future generations what is wise; but acting our part in the simplicity of duty, each day, we make the only safe conditions for reforms in outward conduct of our world. What we can do today for righteousness according to our best judgment of what promotes righteousness, it is duty to do; but no adoption of creeds, methods, or platform can take the place of a true heart.

May your eyes see the coming of the kingdom of righteousness, and your hearts welcome its conquest. Then may we rejoice together in the victory of good over evil in every form, and share in the everlasting welfare.

GENERAL LOCAL NOTES.

Mrs. Georgeson entertained her Sunday School Class last evening.

Prof. Olin is up to his eyes in work at the Alma Teachers' Institute.

Mr. Sears has become the owner of a good bicycle, purchased from Prof. Nichols.

Prof. Failyer is at Garden City in the interest of the Irrigation Experiment Station.

Prof. Georgeson is spending a few days at his new fruit farm in the Ozarks of south-western Missouri.

Secy. Graham is organizing an excursion to Colorado Springs in the interest of the Colorado Summer School of Science.

Prof. and Mrs. Nichols left yesterday for Chicago. Prof. Nichols will spend a year in the special study of physics at Chicago University.

Prof. Walters delivered his interesting lecture, "The Survival of the Fittest," before the Riley County Teachers' Institute Thursday evening.

Pearl Dow, '92, and Lorena Helder, '94, graduated on Tuesday at the Kansas Conservatory of Music at Leavenworth, of which Prof. Brown is President.

The members of the Class of '94 are distributing themselves over the country. Where they are and what they are doing will be told in next week's INDUSTRIALIST.

Prof. Mason's worth has been recognized by offer of the position of Assistant Chief, Division of Forestry, Department of Agriculture, at Washington, D. C. The friends of the College will be pleased to learn that the offer has been declined.

Geo. E. Rose, Third-year in 1879-80, Principal of Rosedale (Kan.) schools, at present teaching psychology, mental philosophy, and book keeping in the Riley County Teachers' Institute, has several times been an interested visitor at the College.

Prof. Hitchcock expects to greatly enrich the College herbarium and his own knowledge of semi-tropical flora in his present trip to southern Florida. He has some acquaintance with the plants of the region, having accompanied a collecting expedition to Jamaica several years ago. The Professor will be absent until August 1st.

Prof. Mason has received from Mr. A. A. Denton, through Prof. Cowgill, what is said to be a piece of the original Concord grape vine, now dead. It was transplanted a seedling by Mr. Bull at Concord, Mass., eighty years ago, and was propagated in 1854. The well-known Martha variety originated in a seedling from this original Concord. The specimen will find a place in the Horticultural cabinet.

The following post-graduates, graduates, and students find employment in the different departments of the College. Executive Department, Margaretha Horn, '93, Grace M. Clark, '92, and Geo. W. Forsyth; Botanical Department, J. E. Payne, '87; Mechanical Department, C. R. Hutchings, '94, G. L. Christensen, '94, H. J. Robison, and C. D. McCauley; Horticultural Department, Isaac Jones, '94, H. W. Moore, '94, C. A. Johnson, S. H. Creager, C. D. Adams, R. J. Barnett, C. S. Evans; Veterinary Department, V. I. Sandt, '94; Farm Department, G. W. Fryhofer, A. C. Peck, F. E. Rader, A. E. Ridenour, J. J. Johnson, Sam Dolby, C. F. Doane, L. W. Hayes, and W. E. Bentzen; Printing Department, I. A. Robertson, F. J. Smith, and Lucy Ellis.

NOTES FROM THE FARM.

The spring crop of hay is a minus quantity this year. To help make up this deficiency the wheat stubble has been seeded to sorghum to be cut as hay. The seeding was done on the stubble, without plowing, with the lister grain drill which puts the seed in furrows about four inches deep and eleven inches apart. With a few timely rains this will furnish some good hay at little expense.

After a very discouraging spring, oats promise a very fair crop. The straw is short, but the heads are good sized and the kernels filling well. So far the crop has been remarkably free from rust. Some of the early vareities are already ripe, among which is Burt's Extra Early Rust Proof, probably the earliest oat in existence. It ripened this year in seventy-four days from the day it came up. It has been raised on the College farm for several years, and while it does not produce as large yields generally as a medium early variety, it always gives a fair yield and is seldom injured by rust.

The dry weather and the late frosts brought the wheat harvest on very early this spring, the latest varieties were cut the 20th, while last year cuttings were made a little later than the first of July. A couple of weeks ago the showing was so poor for most of the experiments that they were cut with the mower and raked for hay, some of the best looking wheat being left. But this has been hastened to an unnatural maturity, the straw dying in many places before the grain was out of the soft dough, and even when there are the finest looking heads the grain is all shriveled up. A few varieties are an exception to this and promise a fair yield of grain of good quality, but these are some that happened to be in such a stage as to miss injury from the frost.

It has been several years since the chinch bugs have done so much damage to our corn. The wheat ripening so early, turned them into the corn while it was quite small, and it is entirely killed for rods back from the edge where the bugs entered. The sporotrichum fungus does not check them in the least. We began the last of May to try and spread the disease according to Prof. Snow's plan. The bugs from the infecting boxes were first scattered in the wheat before there were any bugs in the corn, but as soon as the wheat began to ripen the bugs started for the corn. They were met there and infected bugs scattered among them every two or three days up to the present time, which we expect to continue, but still the damage goes on unchecked. The little red bugs seem to be proof against the disease, as a quart will live shut up in a box for a week with the disease under the best conditions for its spread, and at the end of that time only two or three bugs can be found. The sporotrichum disease has been present in all the wheat that I have examined this spring, but it is always on the mature bug. In a ravine that runs through a wheat field joining the College farm the disease can be found quite abundant down under the dead leaves and among the roots of the wheat; meanwhile the little red bugs have been living with it and thriving. The wheat has just been cut, and the bugs from it have come right across this ravine to the College corn in numbers sufficient to kill the corn entirely along the edge. The wheat field alluded to never had the disease spread there, but it has been present since the middle of May. With us this method of preventing damage from chinch bugs has been a total failure.

F. C. BURTIS.

Board Meeting.

The Board met according to adjournment, on Monday, June 11th, at 4:30 P. M., and continued in session until Friday afternoon. Regent Stratford was detained by a failure of trains until Tuesday, and Regent Hoffman was unable to be present until Thursday.

A general report of condition of the new building, the new experiments at Garden City and Oberlin, and other matters of interest was received.

The following resolutions from the Ladies' Columbian Club of Riley County were presented, and the Secretary was directed to accept the Columbian clock, according to the terms of the resolutions, with sincere thanks:—

Whereas, The Riley County Columbian Club of Riley County, Kansas, prepared and sent to the World's Fair at Chicago, Illinois, a "Columbian Clock" somewhat novel in design and quite valuable, which hung in the Kansas State Building during the session of the Fair, and which was afterwards returned to the Club; and

Whereas, The Club since its return has had new and costly works placed in it, the whole enclosed in a valuable glass case, thus making it a reliable time-keeper and an ornament for some public building; and Science Hall of the Kansas State Agricultural College being the handsomest public building in Riley County, therefore be it

Resolved, That we present to the Kansas State Agricultural College the Riley County Columbian Clock, upon the acceptance of the same in writing by the Board of Regents, and upon the following conditions, viz., upon a written agreement signed by the Board of Regents that it shall be placed and kept in a prominent place in the College, kept in repair and kept running.

Resolved, That if a satisfactory response is received from the Board of Regents of the Kansas State Agricultural College, to the effect that the clock will be received in accordance with the foregoing proposition that the President of the Riley County Columbian Club be authorized to turn over to the College authorities the clock now at the store of J. Q. A. Sheldon and take a receipt therefor.

A suggestion from the committee of ten of the National Educational Association, with a letter from Pres. Eliot of Harvard College, requesting the co-operation of this College in an effort to secure uniform requirements for admission to technical institutions, was given careful consideration, and the Secretary was directed to decline such co-operation, from the fact that this College must still, as heretofore, keep in close touch with the district schools of the State.

The degree of Bachelor of Science was conferred upon the thirty-eight graduates recommended by the Faculty, and the degree of Master of Science was conferred upon six post-graduate students, as recommended by the Faculty.

Leave of absence was granted to Prof. E. R. Nichols for one year from September 1st next, without salary, in order that he may continue special studies, accompanied with permission to use the present vacation in the same way.

Prof. Hitchcock was granted six weeks leave of absence for a tour in Florida, to begin immediately.

Authority was given for moving the library and museum, as soon as the new quarters are ready, and the Committee on Grounds and Buildings was authorized to provide for necessary repairs and improve-

ments in connection with the changes in the use of various rooms in the buildings. The same Committee was authorized to make the needed repairs on the various buildings, and to provide walks and drives required.

Prof. Georgeson was authorized to exchange the old Jersey bull for a younger one, and to connect by water pipe the dairy pasture and the hydrant near the building.

The Station Council was authorized to go forward upon the work of the next quarter, upon the basis of present estimates, and submit estimates at the next meeting of the Board. A few special items of present importance were allowed, and authority was given to co-operate with the Texas Station in some extensive experiments with reference to Texas fever.

Various means of advertising were considered, authority being given to enter at once upon the following: An extra issue of sample copies of the INDUSTRIALIST in an eight-page illustrated edition to the number of 10,000; the preparation of an illustrated circular or folder for general circulation; the preparation of a neat wall card giving cuts of the buildings and important information in regard to the College. A plan for the organization of a Press Club of advanced students was also approved.

The contract of Messrs. Bullock & Baker for N. W. Qr. of 20-14-1, forfeited by failure to pay interest and taxes due in June, 1893, was canceled, and the Secretary was authorized to lease the land.

Regent Secrest, as special committee, offered the following resolutions:—

Whereas, Death has for the third time within a few months snatched his victim from within the circle of the remaining few whose names and services are so closly interwoven with the birth and growth, the ups and downs, sunshine and shadows, of this Institution; therefore,

Resolved, That we note with feelings of profound sorrow the demise of Ex-Governor James M. Harvey, and fuliy realize in common with every well-wisher and patron of the Kansas State Agricultural College, the great loss we have sustained. Among his many public virtues and the services rendered his beloved commonwealth and the nation at large none cast a more brilliant luster across the pathway of his pure and honest life than his judicious selection of the lands apportioned to the College under the Morrill act. And his wise council and timely suggestions in one of the most critical moments in the history of the early struggles of the College, together with his ever watchful administrative eye while officially connected with it as Governor will be a memory forever enshrined in the grateful hearts of the Kansas yeomanry, and will form one of the brightest pages in the annals of this Institution.

Resolved, That the Secretary of the Board of Regents be requested to select a conspicuous place in Science Hall for the portrait of Ex-Governor Harvey; that a copy of these resolutions, accompanied with the heartfelt sympathy of this Board, be forwarded to the bereaved family, and that a page of the College record be set aside for the same.

Upon recommendation of the Committee on Employes, Miss Alice Rupp, Miss Josephine C. Harper, and Mr. Howard M. Jones were re-employed for the ensuing year, without change of salary. Prof. E. A. Popenoe was transferred from the chair of Horticulture and Entomology to that of Entomology and Zoology, with charge of the Museum. Prof. S. C. Mason, Associate Professor of Horticulture, was made Professor of Horticulture and Superintendent of the Grounds, without change of salary. Mr. F. C. Sears, Foreman of the Horticultural Department, was made Assistant in Horticulture at the Station, his salary remaining the same. The resignation of Mr. E. Harrold, Foreman of the Iron Shop, was accepted to take effect June 30th, and Prof. Hood was authorized to select a suitable successor, subject to the approval of the Committee on Employes, at a salary not to exceed $800, from September 1st next. Miss Bessie Little, Assistant in Sewing, was allowed wages for ten months instead of nine, on account of extra service in calisthenics.

A petition from the students that students in military drill be allowed to purchase and wear at pleasure a uniform to be required, was laid over for consideration at the next meeting. Various other items of routine business were also laid over.

The following resolutions were adopted:—

Resolved, That President Fairchild and the Faculty be and are hereby instructed to so re-arrange the duties and positions occupied by the professors and instructors as to fill the vacancy caused by leave of absence granted to Prof. Nichols, and leave vacant instead some full chair which shall include Political Economy; and that this re-arrangement be submitted to the Board of Regents for their action at their meeting July 17th, 1894; and further,

Resolved, That the Committee on Employes open correspondence with educators and educational institutions for the purpose of securing a competent professor to fill the chair of Political Economy, at an annual salary not exceeding $1,600, and that said Committee have authority to invite one or more persons to appear before the Board of Regents at their July meeting as applicants for said position, for the action of the Board of Regents.

The Board adjourned to meet on Tuesday, July 17th, at 3:30 P. M.

NOTES FROM THE GARDENS.

Several quarts of currants were picked the first of the week from the two short rows of bushes, one Red Dutch, and the other Versailles. Most of the other varieties bore little or nothing.

There is promise of an unusually fine crop of grapes. Nearly all the vines have set an abundance of fruit, and the strong, vigorous growth of the vines is a decided contrast to the puny growth of last season.

The bushes of *Rosa setigera* in various parts of the grounds are in full bloom now, and are decidedly handsome. It is a beautiful flower in itself, but coming as it does after nearly all other roses have gone, it is more fully appreciated.

This year the crop of strawberries brought nearly $200. The bed comprises about three-quarters of an acre, and when it is remembered that many of the varieties are planted only for testing, and yield very few berries, it is easy to see that a bed of the same size planted with Warfield, Parker Earle, or some of the other standard sorts would be a decidedly profitable investment. Any one wishing a late variety of strawberry will do well to plant Manchester. Most varieties had ceased to yield profitable pickings nearly a week before Commencement, but the Manchesters held on for nearly a week after it. The berries are of good size and flavor, rather light colored, and very bright and attractive. They are a trifle soft for shipping long distances, but for home use or home markets are a success.

Six varieties of sweet potatoes have been planted, about three hundred plants of a sort. The list comprises Black Spanish, Early Golden, Southern Queen, Red Bermuda, Yellow Nansemond, and Vineless. The test will include habits of varieties, comparative yield, etc.

The large crop of apples which was predicted early in the season has slowly dwindled away till now the prospect is not especially flattering. A few varieties will have nearly a full crop, but on most of the trees the apples are very scarce. There will certainly not be over half a crop in the College orchard.

The straw has been removed from between the rows in the strawberry bed. The rows will now be cut back and the ground between thoroughly stirred to allow for the rooting of the runners. After the new plants have been taken out, the old bed, most of which was set the spring of 1890, will be plowed up.

Early in April four blocks were laid off in the experimental grounds just east of the strawberry bed. Two blocks were subsoiled and two were not. One of the subsoiled blocks and one of those not subsoiled have been irrigated as occasion demanded, and the others have not. Otherwise the treatment has been exactly the same. The same things were planted on the different blocks at the same time and the cultivation has been the same. So far there is a wonderful difference in favor of the subsoiled blocks. The stand of plants is much better, and the plants are more healthy and vigorous and much larger. It will be interesting to note further development.

F. C. SEARS.

Labor and Earnings.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour's daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their ability and means.

All labor at the College is under the direction of the superintendents of the department, and offers opportunities for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with the services rendered, from 8 to 10 cents an hour. The superintendents strive to adjust their work to the necessities of students and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay roll for the past year ranges from $250 to $400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses.

The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

General Duties and Privileges.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturday, and no student may be absent without excuse. Unexcused absences are taken into account in calculating grades. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance and scholarship shows to each student his standing in the College.

Chapel exercises occupy 15 minutes before the meeting of classes each morning, and unnecessary absence from them is noted. On Sunday no services are held in the chapel, but students are urgently advised to attend the different churches of the city.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the Third- and Fourth-year Classes. Once a week all the classes meet, in their class rooms, for exercises in elocution and correct expression.

There are four prosperous literary societies which meet weekly in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the second and fourth Friday evenings of each month.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College, and a union meeting on the first Friday evening of each month.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greetings find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

Library.

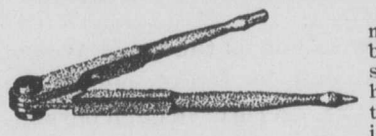
The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.

MANHATTAN ADVERTISEMENTS.

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FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

WM. KNOSTMAN, the Clothier, offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

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J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry and Gold Spectacles, also Musical Instruments.

E. K. SHAW, Jeweler and Optician. Watches, Jewelry, Silverware, Spectacles, Clocks, Fountain Pens, Gold Pens, etc. Repairing of watches, Clocks, Spectacles, and Jewelry done promptly and skillfully. A written guarantee given with all warranted watch work. 308 Poyntz Ave

DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

DENTIST.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

SHAVING PARLOR.

6 BATHS, $1.00 cash. 12 shaves, $1.00 cash, Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, South Second Street.

GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

Evans

THE INDUSTRIALIST.

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Historical society

THE TRUE SPECIALIST.

BY W. A KELLERMAN, PH. D.

[Lecture before the Literary Societies, June 11, 1894.]

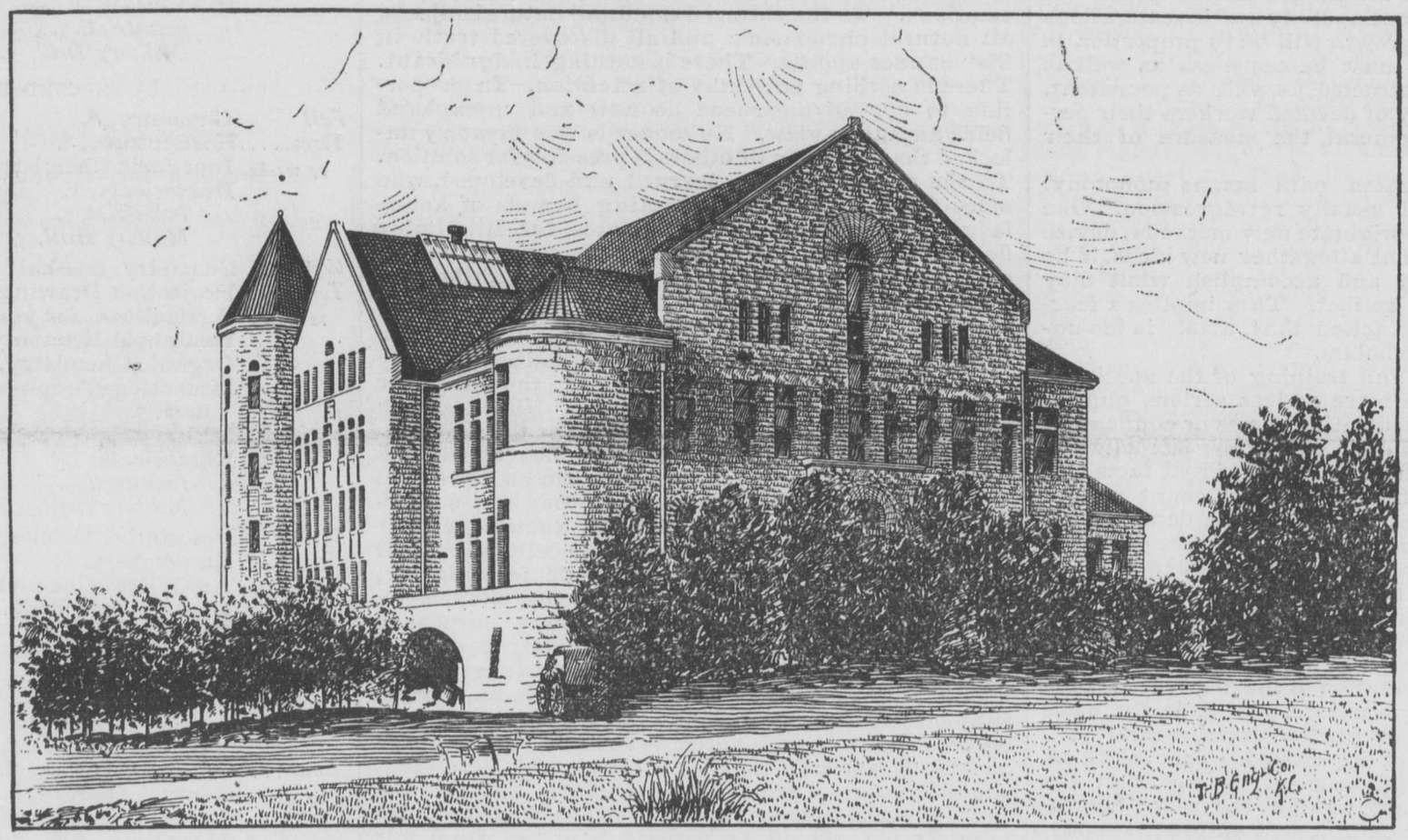
NO fascination equals that of witnessing the unfolding of the complex from the apparently simple. A child is entranced when before his own eyes a gorgeous butterfly comes forth from a dull, uninteresting chrysalis. The transformation is apparently sudden and truly wonderful—a charming event in the fairyland in which children largely dwell. Later, it is discovered that the changes from the egg to the caterpillar, then to the chrysalis, and finally to the imago are not magical, but slow, orderly, natural processes of evolution. They are, however, still interesting, still wonderful—typical of what is transpiring everywhere, even in our own bodies and minds. This evolution of our own being epitomizes the development of nations—yea, the development of the human race itself. From the simple and insignificant proceed the complex and important. This is not merely a doctrine in natural history; it is a law in nature.

The development of the human race from the darkness of savagery to the present stage of enlightenment was indeed very slow. Its progress could not be perceived by the living individuals at any time, but in retrospect it is easily discernible. The onward march was of unequal pace, making epochs of unequal length, and to us of unequal interest. That to which we belong, from an educational point of view, begins about the year 800 A. D., when Charlemange established a school in Paris, and Alfred founded one in England. Whatever schools the Roman Empire had possessed, also the civilization and even the products of civilization had been swept down by the invading hordes from the north. The conquerors had compelled the conquered to become like unto themselves. They were rough, cruel, and ignorant. They were superstitious beyond our conception. The prevalence of a like, but mild belief in a thousand varied forms, today show the merest vestiges of what was universal at that time. They had no literature. They had no desire to study and interpret nature If they accepted Christianity, it was deformed to harmonize with their condition. They were enshrouded in the most absolute darkness of ignorance. No ray of hope for their enlightenment was visible.

There existed among them, however, a class, small indeed, of persons called clerks, who monopolized the "mysteries of the alphabet and the pen." The character of their work was such as to encourage the culture of the mind. They taught their art to apprentices, and the class increased in number. Limited as were their accomplishments, they may be said to have been learned as compared even with the kings and lords of the land. These could fight and rob; they could smear their right hand with ink and slap it down upon contracts and treaties drawn up by their clerks, and say "witness my hand," but history records nothing more. The ingenious man who invented the seal appeared later, so that "witness my hand and seal" indicates a later stage of development.

The clerks were the clergymen. They had labored long in their solitary cloisters to enlarge the scope of their learning. They had multiplied copies of precious manuscripts, and also of their own philosophical works. They prevailed on a few laymen to buy these documents. It was a noble and philanthropic impulse that dictated their course. They urged the establishment of schools. Finally, their persistent efforts were crowned with success. The one established at Oxford was put in charge of the monk Alcuin and the one at Paris was presided over by the monk Grimaldus.

Now that educational institutions were established, the beneficial results must follow. First of all, it gave opportunity to think, however trivial the subjects of thought. It was a great step to encourage thought. When men set about thinking they gradually widen the scope of their mental vision. The friction added sparks to the flame. Their disputes were of course productive of no practical or immediate good, but this was the starting point for modern knowledge, modern culture, and modern civilization.



SCIENCE HALL.

[Made from Pen and Ink Drawing after a photograph.]

Natural phenomena, ever pressing themselves on the notice of mankind, did not then afford the all-absorbing topics of thought and investigation. Had they received paramount attention, the revival of learning and the development of modern science would doubtless have occurred and taken root earlier—but instead fruitless disputations over futilities or abstractions formed the "learning" of the time.

The most important question that arose among them was whether an abstract term or word represented "a real being; an essence in nature; a real and single thing, existing independent of any individual." Two parties arose, the realists and the nominalists. A fertile strife began. The old manuscripts were rescued from oblivion. Minds became excited, and curiosity was aroused. Man himself, both physically and intellectually, became the subject of investigation. The pupils caught the contagion, and soon the people at large found interest in mental activity. It was no longer a disgrace for the nobility to think. The arguments pro and con must be met, and objections removed. The discussions brought forward, in time, scores of subsidiary questions equally urgent for solution.

Suffice it for the present to say that this mental activity, augmented in geometrical ratio in successive generations, was the precursor of all that we enjoy today. To it, indeed, we owe our present schools and colleges. To it we owe not only the intellectual, but also the material advancement of the times. And how marvellous has this progress been! To him, could one who lived in the dark ages appear among us today, how incomprehensible would be the environment. Our business transactions, trading, and shipping would be to him but mists of obscurity. Our locomotion by the aid of steam and electricity would suggest to him a veritable fairyland. The weaving of fabrics, strong and fine, the dyeing in delicate and georgeous tints would, like the fibres and pigments themselves, be a revelation to him. Our architecture, both for beauty and grandeur, for simplicity in design and fitness for use, durability yet withal cheapness, would challenge his profound admiration. Our manufactories would be marvels of intricacy and mystery. Our luxurious comforts and conveniences would be to our visitor as dreams rather than realities. The climax of incomprehensibility would be reached, were his attention directed to our transmission of messages through miles of space in seconds of time; even the human voice itself may be heard, though great distances intervene.

But I would call especial attention to the increased subjects in our college curricula; to the fullness of these subjects; to their extended scope and intricate relations. Only a few years ago a person might aspire to a knowledge of history, language, mathematics, all of the existing sciences; in a word, he could "complete" all the studies and be a learned man. But the case is very different today. At most the student undertakes one of the several four-year courses offered. He expects, even then, to get only a general knowledge of the various branches included. He will now, if ambitious to become learned, devote one or two years, in post-graduate work, to a subject to which his attention has been hitherto more particularly directed. He becomes conscious of nascent ability and incipient power to unravel the intricacies of his subject. For the first time, however, he realizes that his special study has as yet given him merely an insight into his subject. He perceives connections and relations which were to him wholly unknown before. Questions arise that must be solved, and yet their solution requires that he reach out into several allied branches of science. The more he learns the more he has to learn. Instead of being narrowed by his special subject, he expands with its growing proportions. He is becoming a "specialist," and yet he is growing broader. Can a subject from the whole domain of modern knowledge, language, literature, history, science, be named that does not thus expand and assume unwonted dignity and importance, when approached by one who deserves the name of student? Do they not all bear such manifold relations to other branches that to study any one requires a careful examination of numerous others? It was in the early days that the various branches of learning stood alone and aloof from each other. Now they are one. Unity in science is as true as unity in nature, for science is but the expression of our knowledge of nature.

We must conclude that specialists only can, in these days, become learned; that specialists alone can advance knowledge. From this rank our leaders and true benefactors must come. If, then, I mistake not the importance of the specialist's work, the dignity of his vocation, it will be profitable for us to consider what preparation is needed, what qualities must be possessed, and what the character of the work demanded.

The ideal education develops, strengthens, and perfects all the physical and mental forces that reside in the organism. The work and the play, the toil and recreation, must be so adjusted as to develop a physique and a mind that are capable of the greatest exertion and endurance. Great force alone may be admirable, but unless there is a desire or tendency to expend it in useful ways, it may rather be regarded as an unfortunate possession. The training of the specialist is faulty if it neglects the moral or ethical side of his being. He must have developed in him great faith in the capabilities of human nature. He must have strong sympathies, and a will to work for the elevation of the human race. On what he is nurtured depends to some extent, at least, the character of the product. It is a fancy of many that education is merely a process of "drawing out," never furnishing, food—in proof whereof the etymology of the word is quoted as educo (educere), that is, to draw forth; whereas the word comes directly from the Latin educo (educare) which means, to rear, to train, to nurture.

The qualities which the true specialist must possess are such as inhere in the noblest specimens of manhood. He must first of all be a persistent worker. Neither can he come to his task as would a culprit or a slave. He must burn with enthusiasm. His whole soul must be in his work, and everything short of complete devotion will result in ignominious failure. The labor of a few months or even a few years will not justify the title of specialist. In this time the merest beginning only can be made. It is true, there may be the genius who will attain a comprehensive knowledge of some subject or branch of science in an incredibly short period of time, and that, too, without previous extended preparation. He may even add much to the grand sum of human knowledge. But such persons must be counted as the exception, not the rule. Time is demanded for one's own growth, for the full development of his powers and adaptation to the demands that his special study and investigations make upon him. His growth will be in proportion to his application. This must be ceaseless as well as earnest; it must be protracted as well as persistent. Indeed, for the majority of devoted workers their persistency will be, in general, the measure of their success.

To travel in the beaten path means monotony, means stagnation, and usually retrogression. One must open new views, originate new methods, devise new combinations, if not altogether new ideas, if he develop his specialty and accomplish what may justify his honorable epithet. This implies a fearlessness in thought and action that, alas! is too uncommon even among scholars.

The early education and training of the specialist is quite likely to place more or less serious impediments in his way by inculcating views or confirming ideas which may be not only erroneous, but actually incompatible with a true conception of real facts and correct principles. This prejudice I count as the greatest of all obstacles, the more to be deplored because not wholly insurmountable. To recognize the danger, however, is by thus being forewarned, to be in a measure also forearmed. The work of investigation is often of necessity based upon what has already been accomplished in the chosen field. The assumption of its correctness becomes very mischievous when in the interpretation of the discovered facts, it is, though not wholly accurate, yet made the basis for further reasoning or further experimentation.

Think, for instance, of the confusion that might result if the anthropologist assumed as true that the human race in its infancy was on the same mental and moral plane as the enlightened nations of today; if the historian assumed that it was a Jehovah that decided battles; if the linguist assumed that speech is not a growth and development; if the psychologist assumed that the cerebral forces were not invariably orderly in their action and conditioned by antecedents; if the geologist assumed that cataclysms swept from the globe all life at intervals of geologic time; if the physicist assumed that the forces in the universe were not invariable under like conditions; if the naturalist assumed that species were created as such instead of being the products of evolution; and yet precisely these views were held and taught to students—from which class most of the specialists come—within the memory of men yet living. The first duty, then, is to re-investigate as far as circumstances will permit, those conclusions that are delivered to us as first principles, as established and indisputable premises. If new conclusions are dogmatically affirmed and delivered as final, rather than offered as tentative, the same mischief will be repeated in the future. Absolutely free from prejudice is the ideal specialist—with a mind open to receive the truth, whether in harmony with his preconceived views or diametrically opposed to them; holding fast to conclusions that seem to him to be established beyond doubt, yet ever ready to revise his decisions and reconstruct his systems.

The temptation to see things sometimes slightly different from what they are, or a strong wish that experiments may prove one thing rather than another, may seriously invalidate conclusions reached by the investigator. He may be, as it were, unconsciously dishonest. There is, therefore, the most imperative necessity that the specialist be strictly conscientious. The slightest deviation from thorough honesty at all times and under all circumstances—ever reprehensible—is especially so in the case under consideration.

Our knowledge, even in those branches in which the greatest progress has been made, is—we are compelled to confess—very, very imperfect. Conclusions derived therefrom are equally liable to be faulty and incomplete, or often inaccurate. Would not this fact suggest that the spirit of tolerance be assiduously cultivated? One who has seen with his own eyes, heard with his own ears, felt with his own hands, is as positive of the correctness of his assertions as he is of his own existence. Who can deny when he knows? Surely, little experience has he had, if he has not yet learned how imperfect are our senses, and how fallible our reasoning powers. We are compelled to doubt most, even without visible evidence, the assertion of one who never admits that he can be mistaken; who is free to ridicule or denounce views held by others because, forsooth, differing from his own. This phase of the subject demands no extended consideration; so plain is right and duty. Let me here add that injustice is sometimes done when a specialist is denounced because he does not belong to to a certain clan, sect, school, or party. Each of these affirm certain tenets, doctrines, and propositions, and, if he is a devout believer in any of them it is possible that he may be incapacitated for investigating along certain lines, when otherwise he would not be disqualified. It implies the greatest tolerance and doubtless the greatest wisdom on our part to make no accusations because one does not or does enroll himself as a disciple or follower of any person or sect, believing in either case that the various qualities already enumer ated will place the work of the true specialist on a plane far above the slightest suspicion.

A mountain peak in the distance covered with a snowy mantle of purity, reflecting rosy streaks and gorgeous tints derived from the rising orb of day, is a sight that appeals strongly to our æsthetic sense, and calls forth admiration in the dullest soul. It is one of those beautiful sights in nature that charm human beings of all grades of development. But how the feeling deepens when we stand in its very presence: its craggy sides, its threatening rocks, its massive walls, its serene summits reaching into the very heavens, its indefinable and overwhelming sublimity, overcome us and inspire us with the deepest reverence. Or stand in the presence of that mighty cataract, the Niagara, a stupendous exhibition of force. Such spectacles, exhibiting in one case the sublimity of repose, in the other the sublimity of action, arouse the deepest emotions. To the cultured mind, all natural objects, all natural phenomena, and all discovered truth in like manner appeal. There is nothing insignificant. There is nothing unworthy of attention. In proportion to our advancement do new and unexplored fields appear in view. No sooner is one mystery unlocked than a legion of others is pressing for solution. To the specialist, then, learned and developed, who more fully perceives the receding bounds of knowledge, who more keenly appreciates the illimitable field of truth, must a humble spirit come. In him, child-like, the deepest reverence springs. Fitly may we recall the words of Tennyson:—

"Let knowledge grow from more to more,
And more of reference in us dwell."

If the specialist is possessed of the qualities already enumerated, we need have no fear for the character of the work and the results obtained. His is a search for truth, and the field is as illimitable as the universe. However humble his labors, they are never to be despised. The little that is accomplished may prove to be the keystone of the arch, or even the chief cornerstone of the grand edifice of human knowleege.

Neither should the demands of a so-called practical age confine or warp the powers of the investigator, nor influence the interpretation of the phenomena under investigation. Far be it from my purpose to ignore or despise that which is directly connected with the practical in everyday business or everyday life. Equally positive am I, on the other hand, that no subject, however abstruse; no work, however obscure its bearings, can be counted as useless. Such words as "book worm," "theorist," "dreamer," "recluse," should have no place in our vocabulary; and the idea that investigations in the realm of pure science are unprofitable should be forever banished from our minds.

It is not for a moment to be presumed that all knowledge is equally important, or all the results promulgated by the specialists equally useful. As one star differeth from another in glory, so may one truth be greater than another. That which appertains to man and his development, and to the elevation of the human race, must ever be of paramount interest. This includes not only all that relates indirectly to our physical, mental, moral, and emotional development, but it comprises as well a study of all animate and inanimate nature. We are a part of—not above or below—nature. The physical forces there displayed, we recognize as identical or correlated with those in our own organism. An interpretation of nature is inseparable from an interpretation of our own being. As nature is changing, ever unfolding, ever progressing, ever attaining more perfect harmony, so in man, we witness the same processes and the same results. This crowning glory of nature—man—we may humbly and reverently believe has firmly planted his steps in the path that leadeth to perfection; nor may we forget,

"That nothing walks with aimless feet;
That not one life shall be destroyed,
Or cast as rubbish to the void,
When God has made the pile complete."

A Good Education Pays.

1. In dollars and cents. All testimony of statistics agrees in showing that educated laborers of all ranks have better work and better wages than the uneducated.

2. In influence and position. Careful estimates make it certain that the chances of promotion to places of trust and power among men are almost two hundred times as great to an educated man as to the uneducated man.

3. In usefulness. The bulk of good work in the world—discovery, invention, government, philanthropy, and religion—is brought about by those who learn to think by study.

4. In enjoyment. Our pleasures grow out of what we are ourselves more than from surroundings. A well-trained man sees, hears, and handles a great deal more of the world than an untrained one. All things do him more good, not so much because he owns them as because he understands them. He always has good things to think about.

Revised Course of Study.

The necessity for so adjusting various branches of a course of study that there shall be as little waste as possible in acquiring both information and discipline, is felt by every teacher. Such a course is not designed to be absolutely inflexible, but to guide the judgment into some definite line of progress from which no mere whim shall turn a student aside. Students in irregular courses are expected to take the equivalent for the required duties of the term; variations from this rule can be made only with the consent of the Faculty.

Parallel courses are offered to both sexes, with such differences as their necessities seem to call for. The following gives the general scope of the two:—

[Numerals denote number of class hours per week. When no work outside of class is required, italics are used.]

FIRST YEAR.

Fall Term..... *14 weeks.*
Algebra, 5.
English Analysis, 5.
Botany, 5.
Free-hand Drawing, 3.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 4.

Winter Term..... *12 weeks.*
Algebra, 5.
English Composition, 5.
Bookkeeping, one-half term, 5. Commercial Law, 1.
Geomtrical Drawing, one-half term, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 3.

Spring Term..... *10 weeks.*
Algebra, 5.
English Structure, 5.
Elementary Physics, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 5.

SECOND YEAR.

Fall Term..... *14 weeks.*
Geometry, 5.
Horticulture, 5.
Inorganic Chemistry, 5. *Laboratory work*, 2.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 4.

Winter Term..... *12 weeks*
Geometry, one-half term, 5.
Projection Drawing, one-half term, 5.
Agriculture, for young men, 5.
Household Economy, for young women, 5.
Organic Chemistry, one-half term, 5.
Mineralogy, one-half term, 5. *Laboratory work*, 5.
Military Science, one-half term, 2.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 3.

Spring Term..... *10 weeks.*
Descriptive Geometry, 5.
Entomology, 5.
Analytical Chemistry, 10.
Military Science, 2.
Rhetoricals, 1.
Industrial, 5.
Military Drill, 5.

THIRD YEAR.

Fall Term .... 14 weeks.
Trigonometry and Surveying, 5. Surveying Practice, 2.
General History, 5.
Anatomy and Physiology, 10 weeks, 5.
Chemistry of Foods, 4 weeks, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Winter Term..... 12 weeks
Mechanics, 5.
Civics, 5.
Zoölogy, 5.
Map Drawing, about 30 hours a term.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Spring Term..... 10 weeks.
Geology, 5.
Rhetoric, 5.
Agricultural Chemistry, 5.
Perspective and *Sketching*, 4.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

FOURTH YEAR.

Fall Term..... 14 weeks.
Physics and Meteorology, 5.
English Literature, 5.
Agriculture, for young men, 5.
Hygiene, for young women, 5.
Object Drawing, 4.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Winter Term.. .. 12 weeks
Physics, one-half term, 5.
History of Industry and Science, one-half term, 5.
Psychology, 5.
Botany, 5.
Veterinary Science, for young men, 5.
Floriculture, for young women, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

Spring Term..... 10 weeks
Political Economy, 5.
Logic, 5.
Engineering, for young men, 5.
Literature, for young women, 5.
Rhetoricals, 1.
Industrial, 5.
Military Drill, optional.

THE INDUSTRIALIST.

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College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary

GENERAL LOCAL NOTES.

A. D. Rice, '92, is elected Principal of the Riley Schools.

Ada Ingman, Second-year, is assisting Miss Pearce in the library.

A. E. Martin, '91, is manager at Pekin, Ills., for the Central Union Telephone Company.

Bertha A. Bacheller, '88, has been elected a teacher in the Junction City High School for the next year.

Janitor McCreary is making a visit of two weeks to relatives in Holton, He rode down on his bicycle.

A. F. Cranston, '90, was a student in the Law Department of the State University the past year. He will practice in Parsons.

M. G. Riddell, Third-year in 1889-90, visited College during Commencement to renew acquaintances and tell of his farming operations in McPherson County.

Prof. and Mrs. Nichols write of being pleasantly located in a furnished house near the University of Chicago, and contemplate a pleasant and profitable year there.

Lilla M. Arnott, student in 1886-7, was married, June 21st, to Mr. Frank E. Storer, of Minneapolis, Minn., in which city they will be at home at 417 Tenth Street South, after July 1st.

Maud Kennett and Geo. W. Fryhofer, Fourth-year students, are at Geneva Lake, Wis., as representatives of the College Young Women's and Young Men's Christian Associations in the National Convention.

S. S. Cobb, '89, druggist at Wagoner, I. T., in writing for catalogues, adds: "We all feel obligated in some degree to the dear old College for the training which has enabled us to keep pace with the world."

C. E. Freeman, '89, special student in electricity at Armour Institute, Chicago, is visiting his Alma Mater. He is much pleased with his work at Armour, his previous experience having given him a place in the Second-year Class.

Prof. and Mrs. White left yesterday to spend the vacation in special work at Chicago University, the Professor continuing his studies in industrial history and social science, and Mrs. White taking further studies in literature and German.

Prof. Hitchcock wrote recently from Eustis, Florida, where he visited that accomplished and enthusiastic botanist, W. T. Swingle, '90, who is in charge of an Experiment Station there under control of the Department of Agriculture at Washington.

L. H. Dixon, '88, wants a catalogue to look up the address of classmates. He plans to make his home in Buffalo, N. Y., where he has for a year past done a good business as architect, and writes that he now has work ahead to the amount of $75,000.

Mrs. Mayo left on Monday for Fort Collins, Colo., with her mother, Mrs. C. K. Carpenter, and sister Miss Jennie, both of Orion, Mich. After a short visit at Fort Collins with her brother, Prof. Carpenter of the Colorado Agricultural College, she will be joined by Dr. Mayo, when the party plan a ten-day outing in the mountains.

Mr. Eugene Tilleux, editor of the *Western Homestead*, of Tribune, Kansas, is the guest of Dr. Mayo, and an interested visitor at the College. Mr. Tilleux's paper is devoted to agriculture, with special reference to the needs of Western Kansas, and is doing a good work, which, it is needless to say, is appreciated by its readers. The *Homestead's* motto, "We stand up for Western Kansas against the world," shows an abiding faith in the country which will doubtless one day under the influence of irrigation prove the editor no mere theorist. Mr. Tilleux has an experimental acre under irrigation which shows beyond question the possibilities of the soil when properly watered and otherwise cared for.

The Catalogue shows the following list of student assistants for the College year just closed: Arnold Emch, Industrial Art and Designing; Mary E. Cottrell, '92, Arithmetic; Phœbe E. Haines, '83, Arithmetic; Margaretha E. Horn, '93, English; Ruth T. Stokes, '92, Household Economy; James E. Paine, '87, Agriculture; Lora L. Waters, '88, English; W. A. Cavenaugh, Gymnasium; F. A. Dawley, Mineralogy; E. A. Donaven, Agriculture; Lorena Helder, Music; C. R. Hutchings, Woodwork, Surveying; Isaac Jones Jr., Horticulture; H. W. Moore, Horticulture; J. F. Odle, Surveying; J. V. Patten, Surveying; I. A. Robertson, Printing; V. I. Sandt, Zoölogy; J. A. Scheel, Chemistry and Mineralogy; John Stingley, Horticulture; D. L. Timbers, Agriculture; F. E. Uhl, Gymnasium; E. H. Webster, Blacksmithing; J. M. Williams, Surveying.

Nineteen postgraduate students are named in the new Catalogue, as follows: Resident—Grace M. Clark, '92, Manhattan, botany, horticulture; Phœbe E. Haines, '83, Manhattan, industrial art, domestic economy; Margaretha E. C. Horn. '93, Westerbergen, Germany, botany; Bertha Kimball. '90, Manhattan, entomology, horticulture; Bessie B. Little,'91, Manhattan, music, domestic economy; F. A. Marlatt. '87, Manhattan, entomology, horticulture; D. H. Otis, '92, Manhattan, agriculture, botany; J. E. Payne, '87, Edgerton, agriculture, botany; F. C. Sears, '92, Manhattan, horticulture, botany; Kate Oldham-Sisson, '92, Toronto, Canada, zoölogy, horticulture; Ruth T. Stokes, '92, Garnett, domestic economy, botany; Lora L. Waters, '88, Junction City, botany, domestic economy; Fannie E. Waugh, '91, Marquette, botany, domestic economy, drawing. Nonresident—H. L. Pellett, '93, Prairie Center, physics, mechanical drawing; Ben Skinner, '91, Fairview, chemistry, botany, agriculture; J. B. Thoburn, '93, Peabody, horticulture, botany; G. K. Thompson, '93, Irving, physics, engineering; Ava Hamill-Tillotson, '92, Salina, zoölogy, domestic economy; G. W. Wilden, '92, Topeka, mathmetics, physics, engineering.

Mary A. Rees, Second-year in 1886-7, was married to Mr. J. A. Tomlinson, at Minneapolis, Kan., June 26th. They will be at home, Minneapolis, after August 1st.

The abundant rain-fall of the past two weeks may be explained in part by the fact that Prof. Breese has again become Weather Observer, vice Prof. Nichols, absent. Being a Kansas man from the ground up, Prof. Breese loses no opportunity to do the residents of his territory a good turn, and if corn cribs in this vicinity are not filled to bursting this fall it will be because our observer fails in his usually successful attempts to corner the rain market.

Prof. Popenoe received the sad news Tuesday that his brother, W. P. Popenoe, Jr., had died the day previous at Vera Cruz, Mexico, of yellow fever. The deceased was known to most of the College people, and to many citizens of Manhattan, having frequently visited his brother here. He went to Mexico last winter, and spent several months in Oajaca, on the headwaters of the Alvarado River, and was so well pleased with the country—the altitude of several thousand feet above sea level insuring against the fever, and the comparatively undeveloped region offering a rare opportunity for investment—that he bought a small tract. A few weeks ago he returned to Topeka, and also visited Manhattan; and about the middle of June started for the south with a party of friends whom he had interested in the country. Letters received since the foregoing was written state that Mr. Popenoe died at Tuxtepec, Oajaca, from fever contracted at Vera Cruz, in which city the party had to spend a night en route.

The Class of '93 has been heard from. The Catalogue shows them to be in occupations as follows: E. C. Abbott, Garden City, Kas., law student; E. M. Curtis, Flagstaff, Ari;, Louise Daly-Burtis, Manhattan, housewife; Ione Dewey-Earle, Denver, Col., housewife; Albert Dickens, Alden, farmer; Maud Gardiner, Bradford, at home; Susie Hall-Linscott, Ottawa, housewife; Frances Harman, Valley Falls, teacher; Ivy Frances Harner, Lasita, teacher; Margaretha Elsie Horn, Manhattan, clerk in the executive offices, Kansas State Agricultural College; Marcia Ione Hulett, Edgerton, at home; M. F. Hulett, Lawrence, printer; Fred Hulse, Manhattan, farmer, Kansas State Agricultural College; C. A. Kimball, Manhattan, law student; Maud Knickerbocker, Nevada, Iowa, teacher; T. E. Lyon, Garrison, principal of schools, W. O. Lyon, Clay Center, teacher; M. W. McCrea, Bostwick, Neb., teacher; Edith McDowell, Manhattan, at home; G. L. Melton, Winfield, insurance and loan agent; Eusebia Mudge, Eskridge, bookkeeper; Nora Newell, Manhattan, at home; A. F. Niemoller, Lawrence, special student in pedagogy, State University; Susie Noyes, Wabaunsee, at home; H. L. Pellett, Prairie Center, farmer; C. J. Peterson, May Day, teacher; C. F. Pfuetze, Manhattan, engineer; J. D. Riddell, Conway, farmer; J. A. Rokes, Onaga, law student; Agnes Romick, Manhattan, teacher; F. R. Smith, Manhattan, law student; G. W. Smith, Manhattan, teacher; W. E. Smith, Manhattan, teacher and horticulturist; J. E. Thackrey, Hay Springs, Neb., minister; J. B. Thoburn, Peabody, merchant; C. H. Thompson, St. Louis. Mo., assistant in Shaw School of Botany; G. K. Thompson, Irving, engineer; W. J. Yeoman, La Cross, teacher.

Rusts of Grain.

Bulletin No. 46, from the Botanical Department, bears the title, "Rusts of Grain," and details experiments with the fungus, concluding with the following summary:—

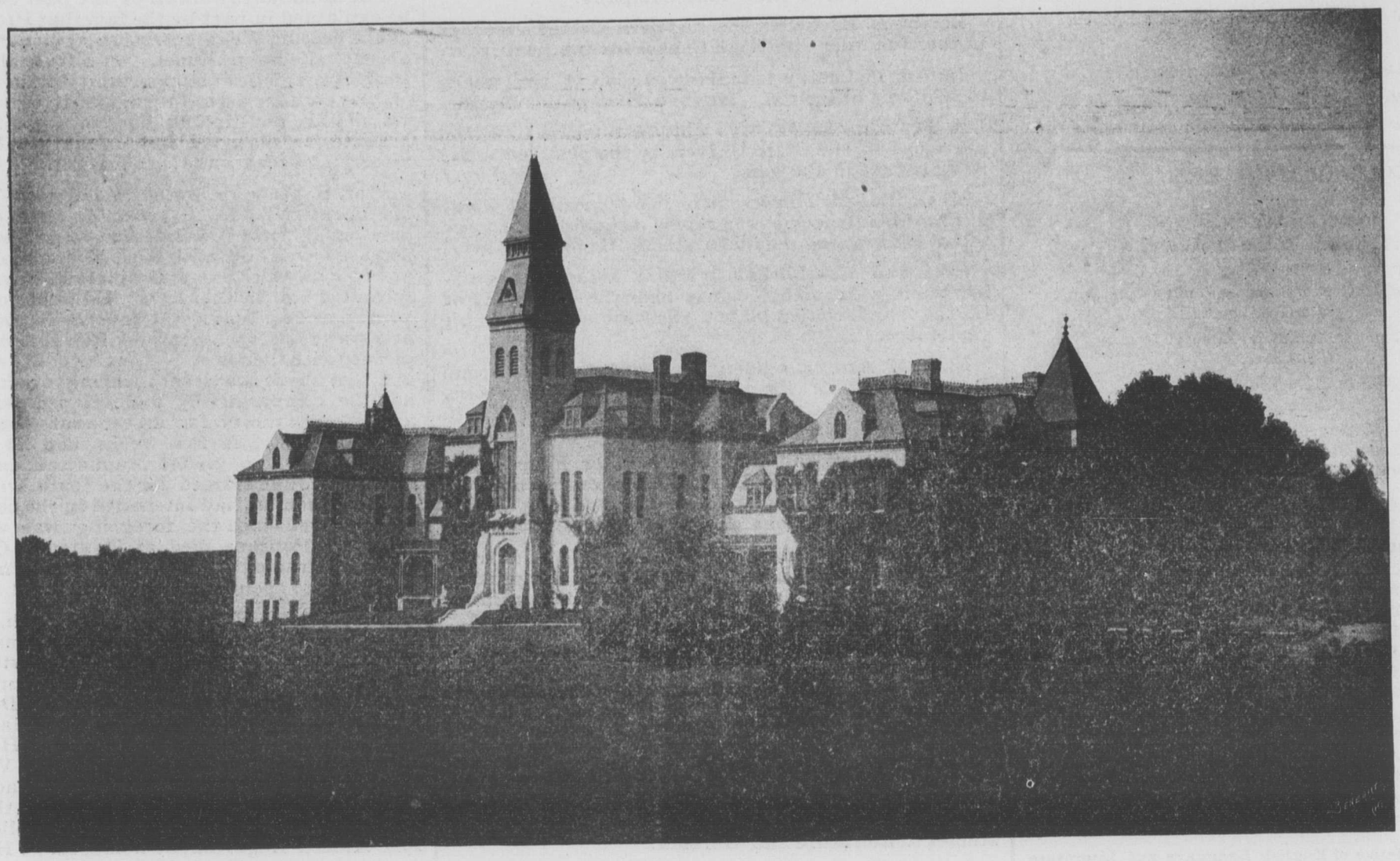
"I. In the vicinity of Manhattan, the common wheat rust, *Puccinia rubigovera*, passes the winter in the tissues of the wheat plant in the mycelial condition. During the warm weather of spring, a crop of spores is produced which, under favorable conditions, may rapidly spread the disease. The infection of the winter wheat in the fall is materially aided by volunteer wheat, which carries the rust through the few months following harvest. The red rust spores are capable of maintaining their power of germination through the winter, and thus infecting the crop the following spring.

"II. There is no evidence to show that the second kind of wheat rust (*Puccinia graminis*) survives the winter here, either in the mycelial condition or in the uredo stage, though it may do so further south.

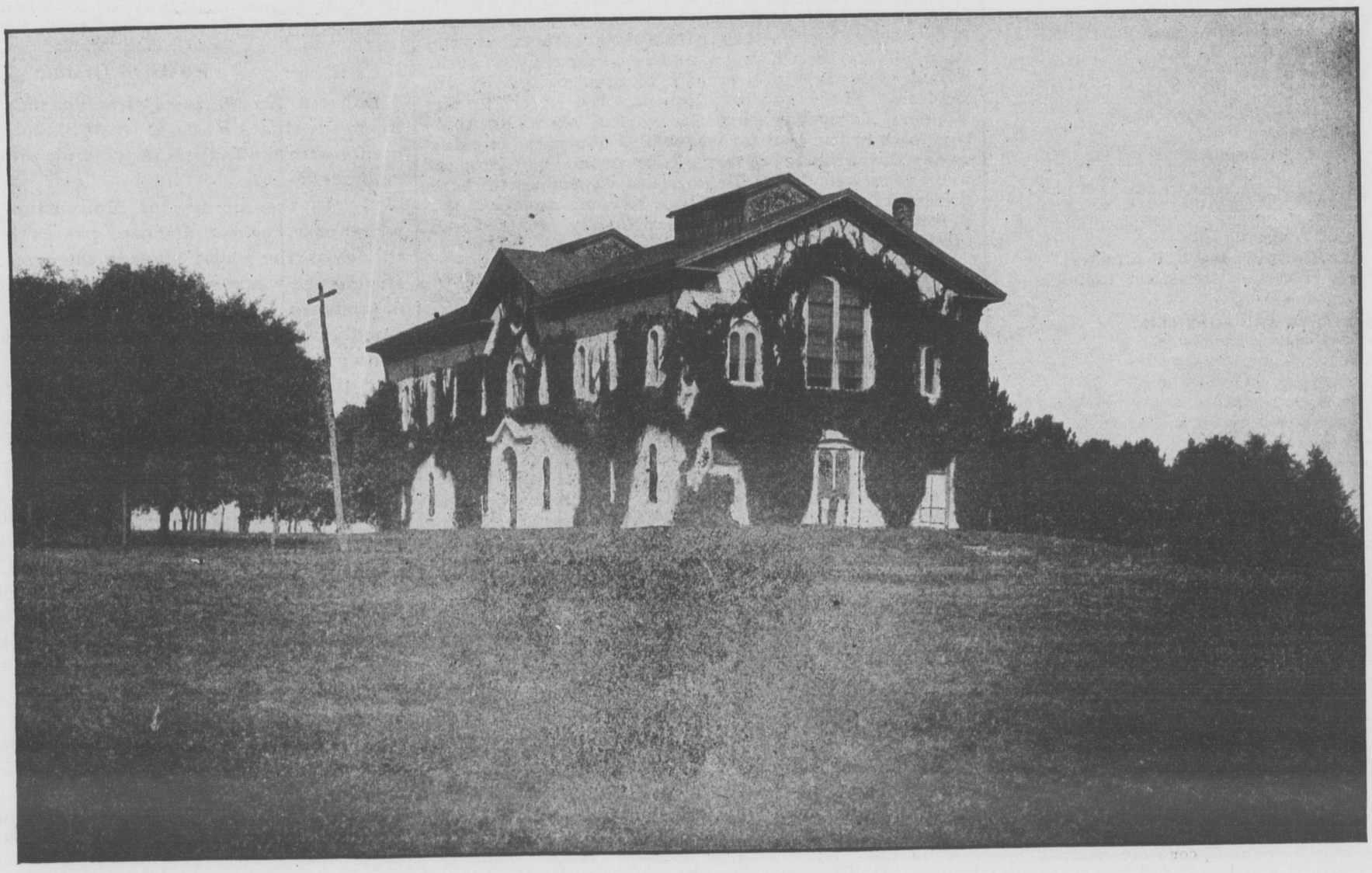
"III. A series of inoculation experiments shows that both wheat and oats are easily infected by rust from the same kind of grain, but not by the same kind of rust from other grains; *e. g.*, wheat is infected by rust from wheat, but not by rust from oats, corn, or blue grass. Hence there is little danger of infection from one kind of grain to another.

"IV. The spraying experiments show that certain fungicides, as potassium bichromate and ferric chloride, are effective in preventing rust, but that, with our present knowledge concerning methods of spraying, it seems impossible to sufficiently cover the foliage. For this reason, although the rust can be largely decreased, we cannot attain perfection, as is done in such diseases as grape mildew. Furthermore, it is extremely doubtful if spraying of wheat or oats would pay, even if effective.

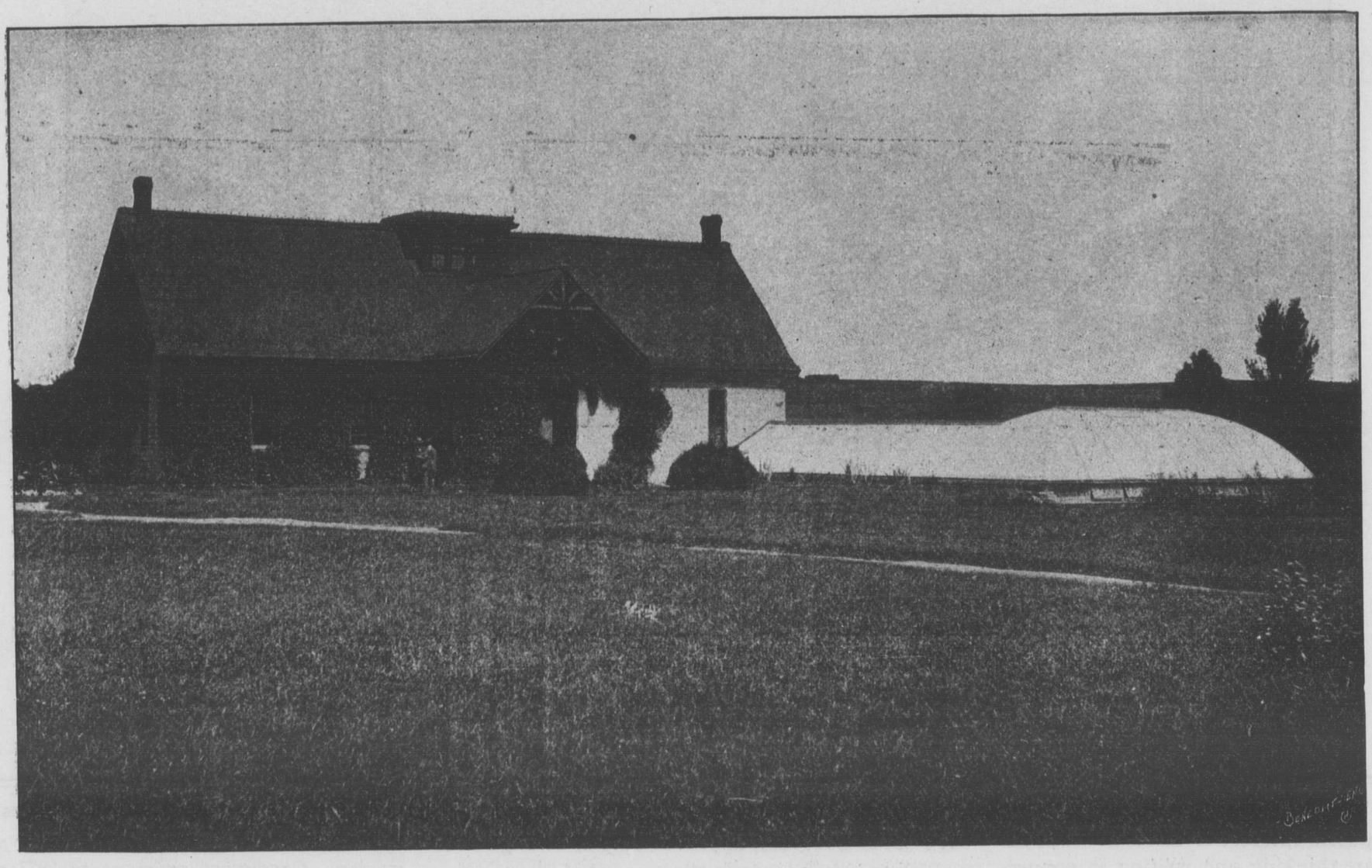
"A more promising plan is the breeding of varieties of grain that shall be rust resisting, the so-called rust-proof varieties."



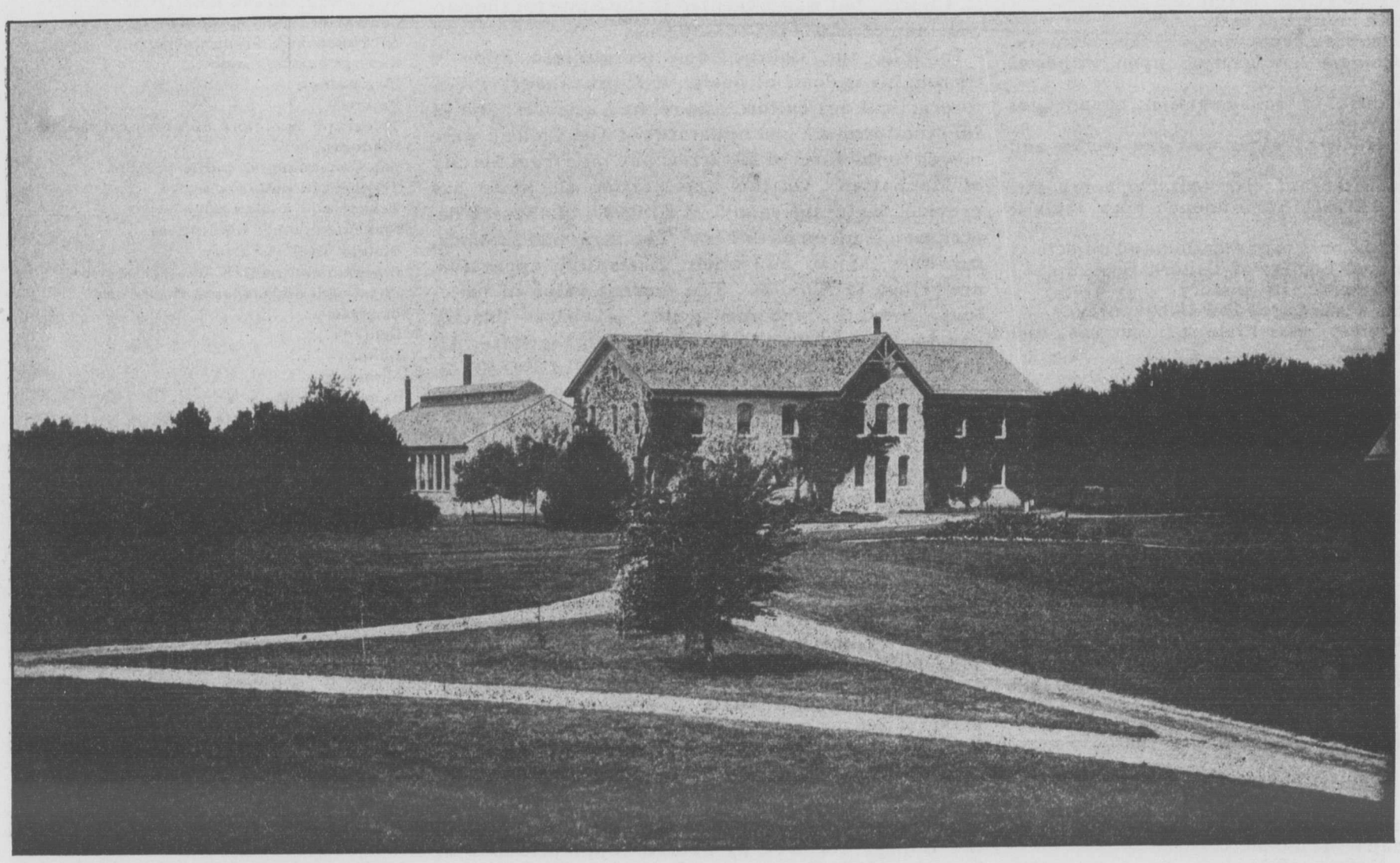
MAIN COLLEGE HALL



VETERINARY LABORATORY AND DRILL HALL.



HORTICULTURAL HALL AND GREENHOUSE.



IRON AND WOOD WORK SHOPS.



KANSAS STATE AGRICULTURAL COLLEGE. (General View.)
[The new Science Hall and Steam Plant are not shown.]

Students' Theses in Political Economy.

It may be of public interest to know of what the College classes are thinking and writing in connection with their study of the science of political economy. Each of the more than forty members of the class selected from an extensive list of topics one for special investigation, and wrote a thesis, a review, or an outline, as the subject demanded. The list of selected topics suggests lines of interest among the students, and may be of use to students elsewhere. The range includes subjects of permanent interest in economic theory as well as matters of current policy, but most of the writers chose subjects of present controversy for the benefits of investigation. Without much regard for order, the list is as follows:—

An income tax: advantages and disadvantages.
Assessed valuation: is a complete and fair assessment practicable?
The wages question: review of Walker.
The eight-hour question: its relation to wages.
Profit sharing in industrial enterprises.
Convict labor: how it affects wages of free laborers.
The effect of Chinese immigration upon wages of Americans.
Government control of transportation: advantages and disadvantages.
Municipal ownership of water and gas works and street railways.
Government ownership of telegraph, telephones, etc.
The Farmers' Alliance: its influence upon legislation.
The Knights of Labor: organization and objects.
The Amalgamated Society of Tailors, Scotland.
The Homestead strike: its history.
Coöperation: its advantages and disadvantages.
Coöperative stores: essentials of success and causes of failure.
International copyright.
Bankrupt laws: their nature and effects.
The new banking law of Kansas.
State laws in regard to corporations.
The State Railroad Commission: organization, duties, and work.
The Interstate Commerce Commission, and its work.
The timber-claim acts: their effect on western settlement.
The National banking system: origin, growth, and condition.
The Bank of England.
Customs or duties: methods of collecting.
Improved locomotion: its effects on production of wealth.
Improved machinery: its effect upon distribution of wealth.
Capital: its place in production of wealth.
Does the commercial traveller increase wants? If so, how?
How a corner in the market is contrived.
Communism: account of some communtities.
The law of diminishing returns in agriculture.
The "laissez faire" principle.
History of the U. S. tariff laws.
A protective tariff: arguments in its favor.
Commercial reciprocity between this and other countries.
The advantage of large manufactories over small ones.
A town boom, and its results.
"The Way Out:" a review of Senator Peffer's work.
History of coinage in the United States.

History and Resources of the College.

An act of Congress, approved July 2, 1862, gave to each State public lands to the amount of 30,000 acres for each of the Senators and Reprentatives in Congress according to the census of 1860, for the "endowment, support, and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, . . . in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

Under this act, the State of Kansas received 82,313.53 acres of land, and, in 1863, established the State Agricultural College, by endowing with these lands Bluemont College, which had been erected two miles from Manhattan, under the auspices of the M. E. Church, but was presented to the State for the purpose named in the act of Congress.

In 1873, the College was reorganized upon a thoroughly industrial basis, with prominence given to practical agriculture and related sciences; and in 1875 the furniture and apparatus of the College were moved to the farm of 219 acres, one mile from the city of Manhattan. On this fine location the State has provided buildings valued at $210,000; of these a description is given elsewhere. The farm and grounds, furniture, stock, and other illustrative apparatus, are valued at $165,000. The present value of buildings, grounds, apparatus, etc., is almost exactly equal to the sum of all appropriations by the State. All the lands have been sold, giving a fund of $502,927.35, which is by law invested in bonds, the interest alone being used for current expenses of the College.

The annual income from the endowment fund—about $30,000—is supplemented by an appropriation under an act of Congress approved August 30, 1890, of $15,000 for 1890, and a sum increasing each year by $1,000 until the annual amount shall be $25,000. This fund is "to be applied only to instruction in agriculture, the mechanic arts, and the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their application to the industries of life, and to the facilities for such instruction." "No portion of said moneys shall be applied, directly or indirectly, under any pretense whatever, to the purchase, erection, preservation, or repair of any building or buildings."

All expense of instruction is thus provided for, and the State is left to erect and maintain the necessary buildings and meet expenses in management of the funds.

Under the act of Congress, approved March 7, 1887, the College receives, by general appropriations in Congress, $15,000 each year for the maintenance of an Experiment Station, "to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science." The property of the Station, including a building erected especially for its use, amounts to more than $10,500.

Occupations of Graduates.

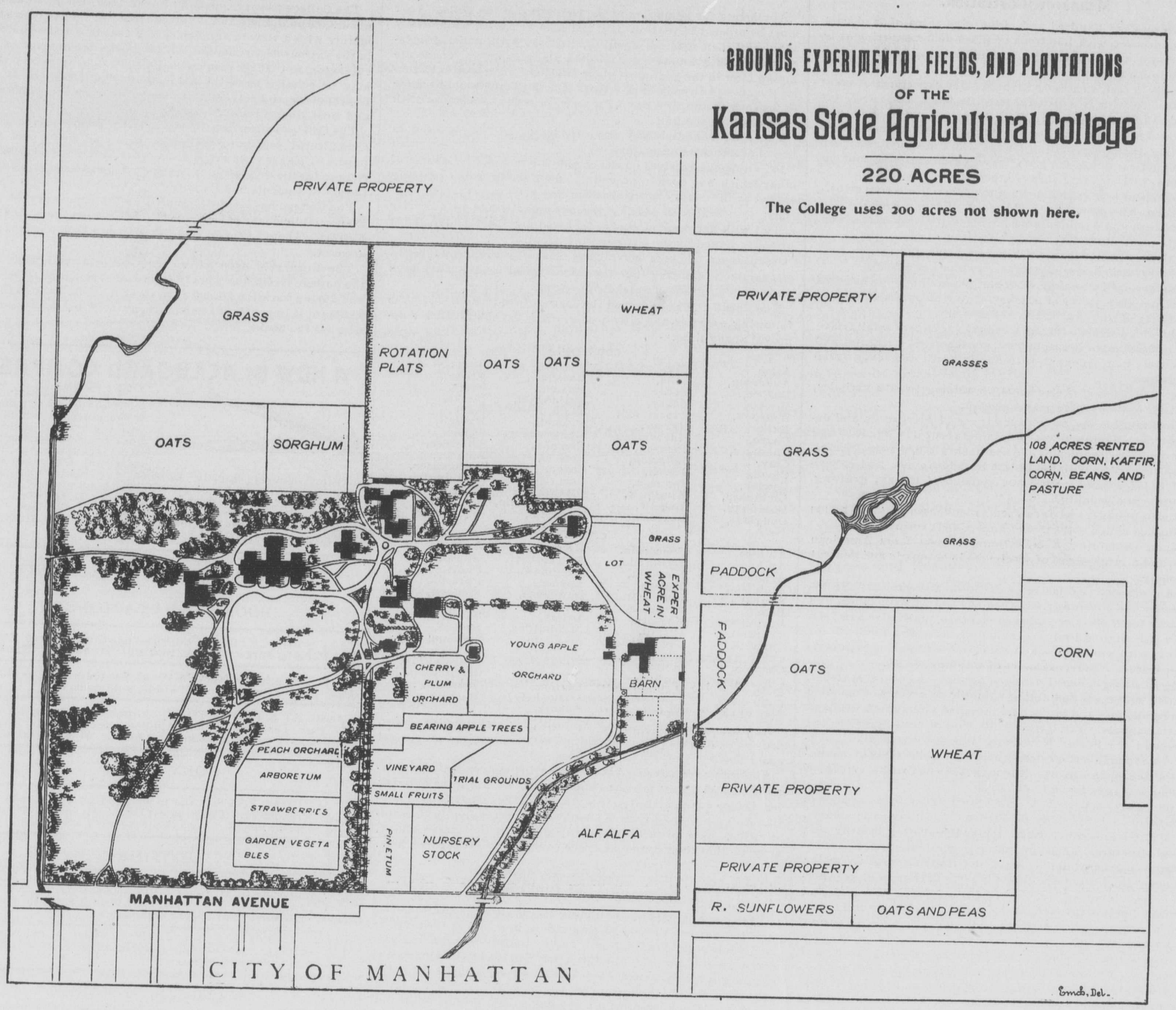
The number of graduates is 358, of whom 120 are women. Graduates previous to 1877 pursued, with two exceptions, a classical course, and received the degree of bachelor of arts. Since 1877, all have received the degree of bachelor of science, after a four-years course in the sciences, with good English training.

Of the 238 men, 6 are deceased, and the remainder are reported in the following occupations:—

Farmers	34
Fruit growers and nurserymen	11
Dairymen	2
Professors and instructors in Agricultural Colleges	7
Assistants in Agricultural Experiment Stations	5
Assistants in U. S. Department of Agriculture	3
Secretary State Board of Agriculture	1
Teachers and students of special sciences	10
Veterinary surgeons	3
Mechanics	4
Civil, electrical, and mechanical engineers	10
Contractors and builders	3
Architects and draughtsmen	4
General business men	15
Merchants	12
Painters	6
Telegraph operators and railroad agents	4
Photographer	1
Superintendents of public schools	5
Teachers in public schools	41
Teachers in Indian schools	1
Students in other institutions	5
Officers in U. S. army	2
Observers in the U. S. weather service	2
Physicians and students of medicine	6
Druggists	2
Dentists	2
Editors	10
Ministers	7
Secretary Y. M. C. A	1
Lawyers and students of law	22
Officials and official clerks	5
Railway postal clerks	3
Unknown	1
Total	253
In two occupations	21
	232

Of the 120 women, 4 are deceased, and the remainder are occupied as follows:—

Housewives	43
At home	12
Instructors in sewing	2
Teachers in household economy	4
Teachers in public schools	32
Bookkeepers	3
Teachers and students of special sciences	6
Teachers of music	2
Teachers of art	2
Clerks or stenographers	4
Printers	2
Milliner and dressmaker	1
Assistant librarian	1
Hospital nurse	1
Student in other institutions	1
Editor	1
Unknown	1
Total	118
In two occupations	2
	11



[For description of Grounds and Buildings, see page 172.]

The New Building.

The following interesting description of the new building is from the pen of Prof. Walters:—

"The new Library and Science Hall, a rough cut of which will be found on the front page, is nearly completed. The outside, including the necessary grading, is done, and a force of plumbers and painters are busy putting the finishing touches to the inside. A part of the furniture has also been received, while the remainder, together with the shelving and fixtures for the library, is expected to be here before long, so that the departments which are to occupy the building will soon be able to move into the quarters for which they have worked, prayed, and planned for so many years. The begining of the college year will find the classrooms and laboratories ready for the reception of the students.

"The building stands about 175 feet southeast of the main College Hall. It faces east and north, as shown in the cut. The main part measures about 100 by 100 feet, and is two stories high, with a twelve-foot basement and a roomy attic. On the main floor this part, or wing, contains a class room for zoölogy, entomology and geology, a biological laboratory, and a private laboratory for the professor, both provided with north light, an office, a museum hall measuring about 40 by 60 feet, and reaching, with its two galleries, to the attic, girls' and boys' wardrobes, water closets, stairways, etc. The second floor shows the same number of rooms, with nearly the same arrangement, and is to be occupied by the Department of Botany. There will be in addition on this floor an experiment station laboratory, and a class room for civics. In the basement are five large rooms, well lighted and ventilated, two of which will be used as meeting rooms for the different societies and organizations, one for a gymnasium for the girls, and one as a taxidermical laboratory. On the east side this floor can be entered directly from the outside, and the closing of a single door will completely sever it from the floors above. All partitions are of solid stone wall or partition tiling, the floors are of cement tiling, and the ceiling of corrugated iron, making the basement entirely fire proof.

"The library wing is only one story high above the main floor, and extends west from the main part. It has been built so as to permit of an extension. Some day, probably not a dozen years after date, the library will have again outgrown its quarters and ask for more space. The stackroom will then be extended southward, from 50 to 100 feet and end in an octagonal art gallery. The stackroom has an inside measure of nearly 35 by 81 feet. An open arch connects it with a reading room measuring about 18 by 35 feet. At the other end, to the north, is the outside entrance to the library and a small workroom for the librarian. The stackroom will contain two tiers of bookstacks, one above the other, and will provide shelving for about 60,000 volumes. Since the catalogue enumerates but 20,000 volumes, only a part of the shelving will be put in place for the present. All stacks and shelving will be made of steel. A stairway and an elevator will connect the librarian's workroom with the basement, where the Government reports, manuscripts, duplicate volumes, etc., will ultimately be stored.

"It is not possible to speak in a short article of all the details that will make the building the model of convenience and solidity which it will undoubtedly prove to be. The walls are built of substantial ashlar work of white Manhattan limestone. The roof is covered with tin shingles of a Spanish pattern, and the inside is finished in varnished hard pine. Ample provision has been made for electric lighting, water service, closets, and drainage. When finished, the building will have cost $60,000. Its builders are the well known firm of Ulrich Bros. of Manhattan, whose senior member is an M. Sc. by this College. It is being erected under the direction of the State Board of Public Works, after drawings and specifications by the State Architect, Mr. Seymour Davis of Topeka, and under the superintendance of Mr. Newman of Clay Center. The designs for the floor plans were made by Prof. J. D. Walters.

"For some time the New Library and Science Hall will be the sentinel of the groups of buildings on the hill, but the growth of the largest agricultural school in the world will soon make it necessary to erect still more buildings. The Departments of Domestic Economy and Sewing have long since outgrown their present narrow and temporary quarters, and will have to ask the next Legislature to be as willing to help the cause of education as the last one was. The Musical Department is in equal need of more room. The Department of Physics, Engineering, and Graphics are located in quarters that do not expand with their growth. These much-needed buildings, with the exception of the last one, will probably be located to the west and south of Science Hall."

Terms and Vacations.

FALL TERM, 1894.

Wednesday, September 12.—Examination for admission, at 9 A. M.
Thursday, September 13.—College year begins.
Friday, October 26.—Examination.
Friday, December 7.—Annual exhibition of the Alpha Beta Society.
Thursday and Friday, December 20, 21—Examination at the close of the fall term.
December 22 to January 7.—Winter vacation.

WINTER TERM, 1895.

Monday, January 7.—Examination for admission, at 9 A. M.
Tuesday, January 8.—Winter term begins.
Saturday, February 2.—Annual exhibition of the Hamilton Society.
February 5 to 16.—Short lecture course for farmers.
Friday, February 15.—Examination.
Saturday, March 16.—Annual exhibition of the Webster Society.
Thursday and Friday, March 28, 29.—Examination, close of winter term.

SPRING TERM, 1895.

Monday, April 1.—Spring term begins.
Friday, April 26.—Annual exhibition of the Ionian Society.
Friday, May 3.—Examination.
Monday and Tuesday, June 10, 11.—Examination at close of year.
June 9 to 12.—Exercises of Commencement week.
Wednesday, June 12, at 10 A. M.—Commencement.
June 13 to September 11.—Summer vacation.

FALL TERM, 1895.

Wednesday, September 11.—Examination for admission, at 9 A. M.
Thursday, September 12.—College year begins.

Means of Illustration.

Agriculture.—One hundred and eighty-five acres of land used for farm purposes, with hundreds of plats under experiment in grain, grasses, and forage crops; and illustrating various methods of culture and rotation.

A barn 50x75 feet, expressly arranged for experimental uses; and connected with it a general-purpose barn, 48x96 feet, for grain, hay, horses, and cattle. Both buildings are of stone, and are provided with power, and equipped with improved machinery for shelling, threshing, cutting for the silo, and steaming.

Two piggeries—one of ten pens, for experimental uses, and one of six pens, with separate yards for general purposes.

An implement house, 22x50 feet, of two stories, and corn cribs.

Shorthorn, Aberdeen-Angus, Hereford, Holstein-Freisian cattle; Berkshire and Poland-China swine; and Shropshire sheep.

Farm implements of improved patterns.

Collections of grains, grasses, and forage plants.

Buildings, stock, and equipments are valued at $26,000.

Horticulture and Entomology.—Orchards containing one hundred varieties of apples, thirty of peaches, thirty of pears, twenty of plums, thirty of cherries, and five of apricots.

Small-fruit gardens, with two hundred varieties of small fruits, including blackberries, raspberries, gooseberries, currants, and strawberries; and vineyard, with one hundred and sixty varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties, of from one to twenty-five years' growth.

Ornamental grounds, set with a variety of evergreens and deciduous trees. Sample rows, containing about one hundred and fifty varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames, and experimental beds. Practice rows for students' budding, grafting, cultivating, and pruning.

Two well-planned and furnished greenhouses of three rooms each, stocked with a collection of native and exotic plants.

Museum, containing a collection of woods from American forests, and a large series of specimens in economic and general entomology.

Value of property, exclusive of orchards and grounds, $16,000.

Chemistry and Mineralogy.—Eight rooms fitted with tables and apparatus for a class of eighty students in qualitative analysis, eight in quantitative analysis, including necessary facilities for assaying, with a mineralogical collection and general illustrative apparatus. Value, exclusive of building, $8,200.

Geology, Zoology, and Veterinary Science.—A general museum, well fitted with cases containing valuable collections of mounted Kansas mammals and birds, with mounted skeletons of wild and domestic animals. The largest collection of Kansas fishes and mollusks in the State. Kansas reptiles and batrachians, salt-water fishes and invertebrates, in alcohol. Collections of mound-builders' and Indian relics. Kansas fossils and rocks, typical of the geological ages found in the State.

In veterinary science: A laboratory fitted with apparatus and re-agents, for the study of disease. A collection of charts, models, and anatomical preparations, illustrating healthy and diseased structure. Value, including general museum, $7,500.

Botany.—A general herbarium, consisting of a large collection of plants of the United States and other countries; a Kansas herbarium, containing specimens illustrating the distribution and variation of plants throughout the State; also twenty-eight compound microscopes, four dissecting microscopes, tools, re-agents, etc. Valued at $3,750.

Drawing.—Models, plaster casts, patterns, charts, easels, and implements. The class room is provided with top light, and furnished with twenty-four new Dietzgen patent drawing tables. An adjacent room is fitted up with running water, coating table, ruby light, etc., for blue and black printing. Valued at $2,000.

Physics.—Complete physical apparatus, for general instruction in physics, and meteorological instruments, including a self-recording anemometer. Among the apparatus for special work may be mentioned Coulomb's torsion balance, Kohlrausch differential galvanometer with reading telescope, Deprez-Carpentier ammeter, Ayrton and Perry's voltmeter, Thompson's potential and current galvanometers, Carhart-Clark standard cell, standard legal ohm, Wheatstone's meter bridge, Edelman dynamo. The value of the whole is $4,000.

Mathematics and Surveying.—Transits, plane table, compasses, levels, chains, models, etc. Valued at $1,300.

Mechanics and Engineering.—Carpenter shop, with separate benches and tools for forty-five students in each class, besides lathes, mortising machine, circular saws, band saws, planer, friezer, boring machine, grinder, and general chest of tools for fine work.

Shops for iron work contain blacksmith forges to accommodate at least sixteen; brass foundry of twelve benches and large furnace for brass; iron foundry, with two-ton cupola; machine shop equipped for thirty students, including, besides hand tools, lathes, drills, planer, etc.

Inventory of material and apparatus in both shops, $14,000.

Kitchen Laboratory, with ranges, cooking utensils, dining-room furnishings, dairy furniture. Valued at $800.

Printing Office, with thirty pairs of cases; large fonts of 6-point, 8-point, 10-point, and 11-point Roman type; a good assortment of job type and brass rule; a Babcock cylinder press, a new Liberty quarto-medium job press, a Gordon eighth-medium job press; a mitering machine, a rule-curving machine, and a paper cutter. Value of equipment, $4,300.

Sewing Rooms, with eight machines, models, patterns, and cases; worth $700.

Music Rooms, with five pianos, four organs, other instruments, and nine charts; valued at $1,800.

Armory, containing one hundred and fifty stands of arms (breech-loading cadet rifles, caliber .45), with accouterments; two three-inch rifled guns; also swords, uniforms, etc. Value, exclusive of arms, $1,000.

Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

Terms of Admission.

Applicants for admission at the beginning of the College year must be at least 14 years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic, geography, English grammar, and United States history. Those applying later in the year must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of a term, in order to advance with the class from the first.

The following diplomas and certificates will be received in lieu of entrance examinations:—

1st. Diplomas received on the completion of a county course of study which has been approved by the Faculty, when properly signed by the county superintendent.

2nd. Certificates of passing the grammar grade in any city school with a course of study approved by the Faculty, when properly signed by the city superintendent.

3rd. Kansas teachers' certificates issued by the county board of examiners, showing that the above-named studies have been passed with a grade of at least 70 per cent.

The Faculty have approved the course of study adopted by the following counties and cities; others may be submitted for approval at any time:—

COUNTIES.

Allen,	Elk,	Linn,	Reno,
Anderson,	Ellis,	Marshall,	Rice,
Barber,	Ford,	Marion,	Riley,
Brown,	Geary,	McPherson,	Rooks,
Bourbon,	Greenwood,	Miama,	Rush,
Butler,	Harper,	Mitchell,	Russell,
Chase,	Harvey,	Montgomery,	Saline,
Cherokee,	Jackson,	Nemaha,	Shawnee,
Clay,	Jefferson,	Neosho,	Sumner,
Cloud,	Jewell,	Osage,	Wabaunsee,
Cowley,	Johnson,	Osborne,	Washington,
Dickinson,	Kingman,	Ottawa,	Wilson,
Doniphan,	Labette,	Pottawatomie,	Woodson,
Douglass,	Leavenworth,	Republic,	Wyandotte.

CITIES.

Abilene,	Concordia,	Kanapolis,	Oswego,
Anthony,	El Dorado,	Kansas City,	Ottawa,
Arkansas City,	Emporia,	Kingman,	Paola,
Atchison,	Eureka,	Larned,	Parsons,
Augusta,	Fort Scott,	Lawrence,	Pomona,
Beloit,	Fredonia,	Leavenworth,	Russell,
Burlington,	Gaylord,	Lyons,	Salina,
Caldwell,	Girard,	Manhattan,	Seneca,
Chanute,	Great Bend,	Mankato,	Solomon City,
Cherryvale,	Hiawatha,	McPherson,	Topeka,
Chetopa,	Holton,	Minneapolis,	Washington,
Clay Center,	Horton,	Newton,	Wellington,
Clifton,	Hutchinson,	Olathe,	Winfield,
Coffeyville,	Independence,	Osage City,	Wichita.
Columbus,	Junction City,	Osborne,	

Applicants over 18 years of age, who, for lack of advantages, are unable to pass full examination, may be received on special conditions.

Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions, upon presenting a certificate from the proper officer, showing that their course has been equivalent to that given here.

Grounds and Buildings.

The College grounds and buildings, occupying an elevation at the western limits of the city of Manhattan, and facing towards the city, are beautiful in location. The grounds include an irregular plat in the midst of a fine farm, with orchard, vineyard, and sample gardens attached, the whole being surrounded by a durable stone walls. The grounds are tastefully laid out and extensively planted, according to the design of a professional landscape gardener, while well-graveled drives and good walks lead to the various buildings. All of these are of the famed Manhattan limestone, of simple but neat styles of architecture, and admirably suited to their use. All recitation rooms are excellently lighted and ventilated, and are all heated by steam or hot water. A complete system of sewerage has been provided.

College, 152x250 feet in extreme dimensions, arranged in three distinct structures, with connecting corridors. This building contains, in its two stories and basement, offices, reception room, cloak rooms, studies, chapel, library, reading room, kitchen laboratory and dairy, sewing room, society rooms, printing office, and twelve class rooms.

Chemical Laboratory, one story, 25x99 and 46x75 feet of floor space, in form of a cross. It contains eight rooms, occupied by the Department of Chemistry and Mineralogy.

Mechanics' Hall, 39x103 feet, two stories, and 40x80 feet, one story, occupied by wood and iron shops music rooms, iron foundry, lumber rooms, etc., in addition.

Horticultural Hall, 32x80 feet, one story and cellar, having cabinet room, class room, and storage, with greenhouse attached.

Horticultural and Entomological Laboratory, with propagating houses attached.

Museum Building, 46x96 feet, and two stories high. This building, which has served many purposes, is now fitted for an armory, drill room, and veterinary laboratory below, and for class room and laboratory for Department of Botany and Museum of Natural History above.

Science Hall, containing the library, with ample reading rooms; class rooms and laboratories, and cabinet room for zoology, entomology, and botany; and suitable rooms for the various College societies.

Appropriation is also made for a central steam plant, to furnish heat and power for all the buildings. This plant is to cost $14,000, and will be completed in the fall of 1893.

The farm barn is a double but connected stone structure, 50x75 feet and 48x96 feet, with an addition of sheds and experimental pens 40x50 feet. A basement, having stables for 75 head of cattle, silos, engine room, and granaries, underlies the entire structure.

The horticultural barn is a stone building, containing storeroom, granary, and stables for several horses.

The foundries, lumber house, implement house, piggery, and various out-buildings are of wood.

Two stone dwellings, occupied by the President and the Professor of Agriculture.

Short Lecture Course for Farmers.

Beginning on the first Tuesday of February each winter, a two-weeks course of lectures is given on agriculture and related arts and sciences. This is provided for those farmers and others who cannot take up the fuller work of the regular College classes. Members of the Faculty are assisted in delivering these lectures by prominent farmers, stock raisers, and fruit growers of the State; and full discussions of the topics presented bring out the varied experiences of those attending. This course, during the winter of 1893, was attended by about 40 farmers.

Library.

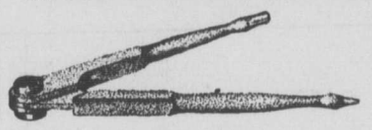
The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at $26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each. 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.

MANHATTAN ADVERTISEMENTS.

BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

WM. KNOSTMAN, the Clothier, offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry and Gold Spectacles, also Musical Instruments.

E. K. SHAW, Jeweler and Optician. Watches, Jewelry, Silverware, Spectacles, Clocks, Fountain Pens, Gold Pens, etc. Repairing of watches, Clocks, Spectacles, and Jewelry done promptly and skillfully. A written guarantee given with all warranted watch work. 308 Poyntz Ave

DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

DENTIST.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

SHAVING PARLOR.

6 BATHS, $1.00 cash. 12 shaves, $1.00 cash, Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, South Second Street.

GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.